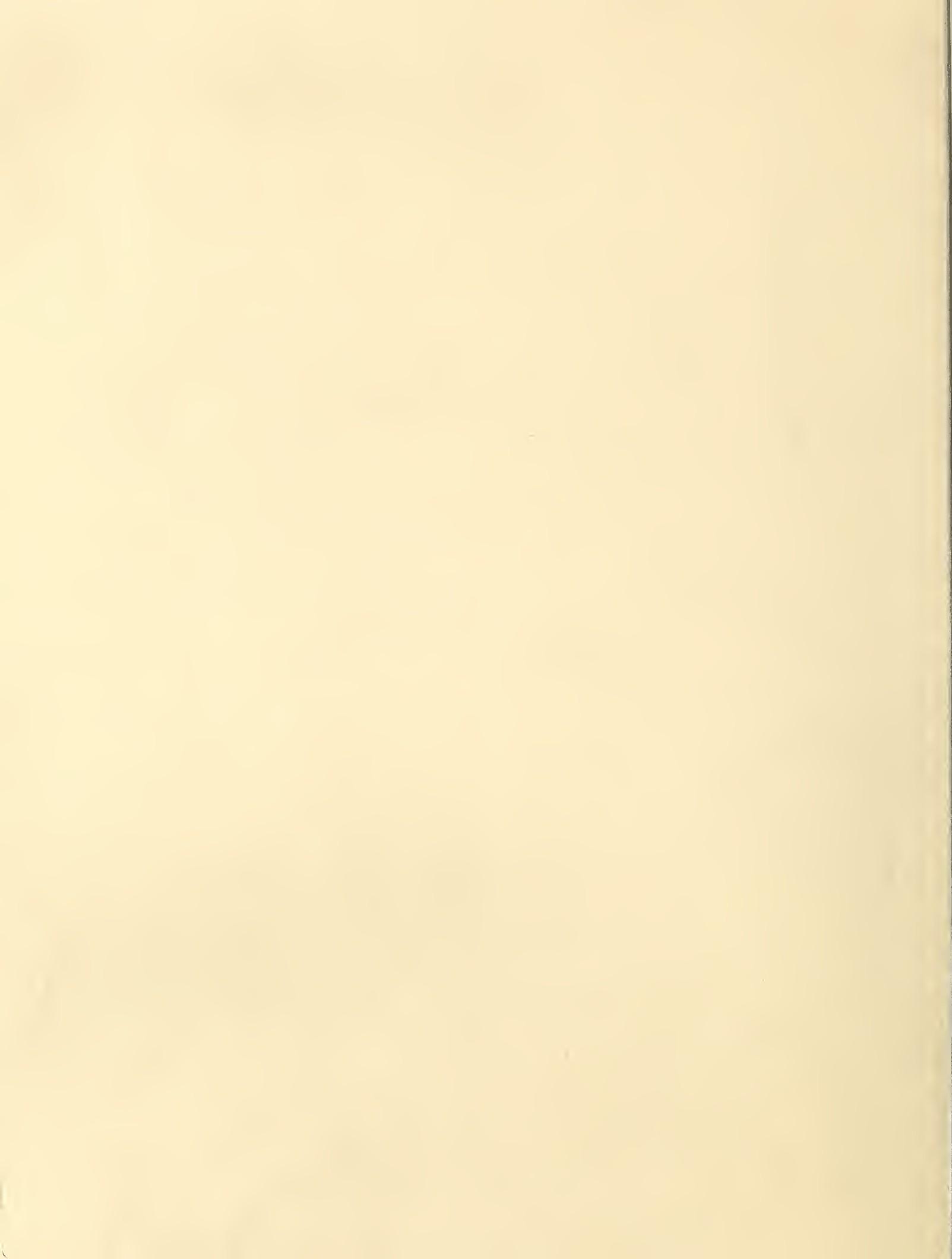


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BETTER FRUIT

VOLUME VIII

DECEMBER, 1913

NUMBER 6

THE DIVERSITY EDITION

Showing the Value of Diversified Farming for the Fruitgrower, with Articles Regarding
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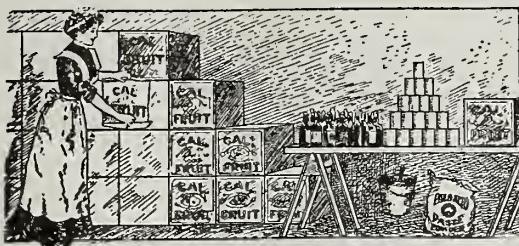
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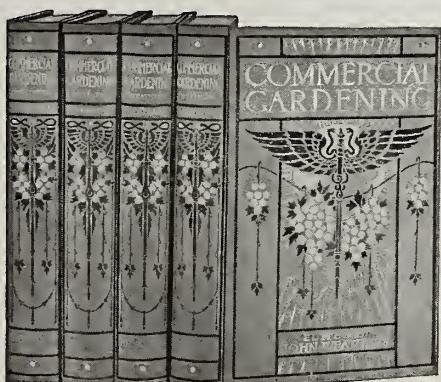
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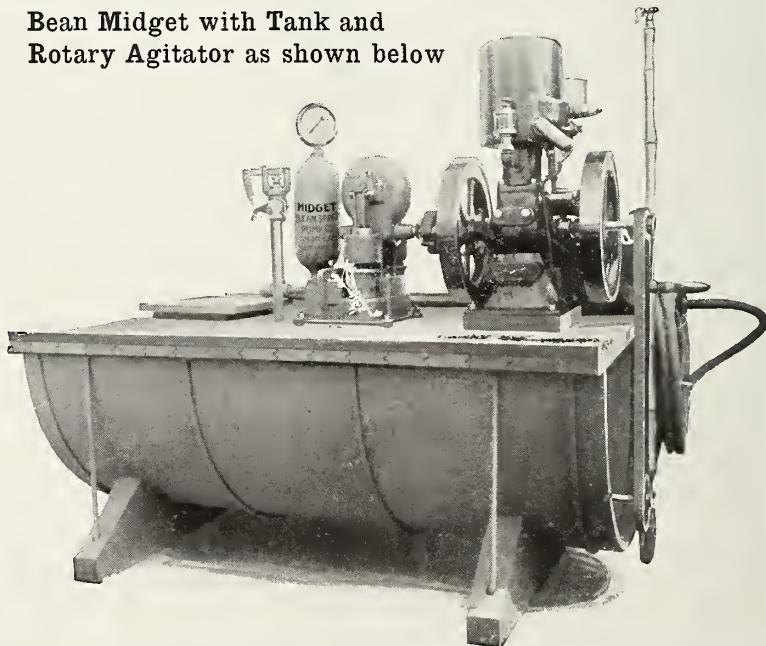
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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Dairying in Connection with Fruit Growing

By E. C. Burlingame, Walla Walla, Washington

ANSWERING your request for a short paper on the orchardist devoting a part of his land to crops other than the apple or pear, I agree with your idea that "all of our eggs in one basket" isn't the proper solution of the successful fruit man. I do not mean by that to say that a man who makes a specialty of fruit and does nothing else is not going to succeed, but I believe that he would have a light year more often than the man who has part of his land in some other crop, so in case that we had a year when the apple crop was a failure (and these things come to all of us who are raising fruit) he would not fear the effect of a failure of his fruit crop if he were a diversified farmer. He would be in a position to use the income from his other line of farming, that would tide him over, and he would not feel the loss that his neighbor would, who perhaps had expected to get an income from his fruit crop and got nothing in return on account of his failure that year.

The Northwest is young in the fruit business and fruit growers have to look forward a long time into the future and figure out how best for them to succeed. Of course the man who raises nothing but fruit can stand up and make the claim that his labor is not arduous; he has no hardship in raising fruit, like it is with the farmer who raises part fruit and part something else. Take for instance the man who has a patch of alfalfa and a number of dairy cows: there is one thing he can't figure on doing; as soon as he has sold his apple crop and got returns he can't pick up his baggage and take the train for Long Beach or Los Angeles, telling his neighbor he will be back the last of February or first of March, when it is time to commence to prune his orchard. If he is a diversified farmer and has alfalfa, cows and pigs, then he has to stay right on his job and attend to business. Cows, pigs, poultry and anything of a similar line have to be attended to and looked after, twice a day, 365 days in the year. The man who doesn't like that kind of work of course will not succeed in it, if he has an aversion to the work that is necessary. But to the man who looks ahead to the future and who wants to be a fruit farmer, raising his family and his children, educating them in the community in which he lives, if he is willing to give the attention to the dairy business that it requires there is no question but what he can succeed and succeed in a first-class manner. However, to succeed he has got to go about it in a businesslike manner. If he is a first-class orchardist of course

he is an intelligent man. He believes in reading everything that he can get hold of about horticultural interests and following the ideas of the most successful of his neighbors. He must be up-to-date in his pruning, his spraying, his thinning, his cultivating, his packing; and if he is going to mix the dairy business with the fruit business then he has got to take the same interest in the dairy cow that he does in his orchard. He does not for a moment want to get the idea into his head that

Features of this Issue

BEEKEEPING FOR ORCHARDIST
AND FARMER

INTERCROPPING VEGETABLES IN
THE COMMERCIAL ORCHARD

DAIRYING IN CONNECTION WITH
FRUIT GROWING

THE IMPORTANCE OF THE LIVE-
STOCK INDUSTRY

FRUIT GROWING AND DIVERSIFIED
FARMING

POULTRY AND OTHER SIDE LINES

THE IMPORTANCE OF HOGS AND
CHICKENS

he can just go to a sale in the valley at Bill Jones', who is disgusted with the dairy business, and buy a bunch of Jones' cows and go right to making money. If he does he will find that Jones has not made a mistake when he sold his cows. He will find out that Jones' cows were boarders in the place of dividend makers, as is the case with about 75 per cent of the dairy men who are milking cows in the Pacific Northwest today. You may be surprised if I tell you that over 40,000 dairy cows have been shipped into Idaho, Washington and Oregon in the last year, principally from the dairy states of the Middle West and East. I am not going to say there is any reader of this article foolish enough to think that because he paid \$75, \$100 or as high as \$150 for cows from the States of Michigan, Wisconsin or New York that he got the best cows from those districts. On the contrary, with few exceptions he has got what the other fellow didn't want, or perhaps he has got young heifers that are untried as to what their value is. These people in the Northwest have to keep these cows, thin them out and by using good sires breed up and improve their stock until they have cows that will pay to breed and care for.

You don't think for a minute that if a man in the dairy business in the vicinity tells you he has more cows than he can care for or more than his trade will demand, you don't think for a minute that you can go there and pick his herd. That would be absurd. He is going to sell you the second-rate cows, providing he has enough first-rate cows to do his work. If not, he will give you third-rate cows, and he will keep the best of his stock for himself. No one is going to sell you a cow that will make 500 pounds of butter a year, even though you pay him \$150 for it, and keep a cow that makes 150 pounds of butter a year when you are offering him \$50 for it, or the price of beef, which is worth about \$50 for an ordinary cow.

Now the intelligent fruit grower that proposes to mix dairying with his fruit growing wants to use the same care in building up his dairy as he has done in growing his fine orchard. My advice would be, if you are going to mix cows with your orchard, to go to a reputable breeder of the variety of cattle you wish to use, say Jersey, Guernsey or Holstein, tell him you are willing to pay a good price but you want a first-class article. You want the very best and you will pay what it is worth. I have a son-in-law who has twenty acres of orchard, and he has taken my advice and is going to put on his farm a bunch of cows. His first thought was to go out in the district in which he lives and buy the best cows he could get. He asked me what I thought about it. I told him under no consideration at all in my judgment would it be wise to do it. I said, "You go to a breeder of Guernseys or Jerseys, if that is the kind you want, and you pay him \$100 to \$150 for baby heifer calves, anywhere from four months to one year old; get pedigreed stock; get stuff whose mothers are making not less than 500 pounds of butter a year; bring them home or ship them home, and by the time they are ready to have calves and give milk they have become acclimated as to conditions and they start making you money without any trouble, and the result of such a procedure will be that just the moment your cows commence to produce and your neighbors find out what a nice bunch of money-makers you have you will have a demand for every heifer calf at your own price, and if you register your stock your male calves will be in demand to head the herds of your neighbors."

Now you may say I am extravagant in my remarks, and that it takes too much money to start a dairy like this.



Cattle Scene in Oregon in Connection with Fruit Growing

The high price of meat and dairy products is making cattle raising a very profitable business for the orchardist who has pasture land, or in connection with cover cropping he can easily maintain a few cows and in this way conduct a side line that will bring him in some mighty good money regularly every month of the year.

If you haven't the money to start that way, go slow and be a little longer in starting, because the progress you will make with such a start like that, even though the number of your animals be few, will be 300 per cent better than starting in with a scrubby bunch of cattle from your district that are eating high priced feed, off of high priced land, and you are only getting back pay for feed in the butter and milk. In other words, they are boarder cows living at the expense of your feed and labor. If you can only buy three or four of the righ kind of stock, better buy that number and be a little longer working into it. As an instance that I believe in it I will say that a short time ago I bought a calf six months old from an Oregon breeder at Carlton and paid his price of \$200 cash. The calf's mother made 600 pounds of butter a year, and of the twelve cows this gentleman had ten of them had large producing qualities and were entitled to registration in the American Jersey herd book.

We will say for the sake of argument that your cows won't do as well as they would in the hands of the breeder, who is perhaps a specialist on getting a large yield, so as to sell his stock, but the cow that would give 600 pounds of butter in his hands would give 400 pounds under ordinary good care to start with, and say you progress with

the dairy herd as you have done with the apple business, you will find out that the extra care that you would need to give the cow to get this additional butter would make you a good deal of money. We will say you have ten cows on your farm and they are making 400 pounds of butter per cow. Jersey butter has sold for the past year at an average of about 33½ cents. That would give you about \$135 per head as an income from your cows. Now it doesn't take the entire labor of a dairy man to milk ten cows and if you had to hire help you would know that at the start you were making a profit off of it on what you had to pay out for such labor and everything concerning these cows. From your butter you would have your buttermilk and the separated milk to feed your chickens, and on the surplus over and above what it would take to raise your calves you could keep a nice bunch of pigs, and in many ways you would see the benefit of keeping this bunch of cows on your farm.

The value of the fertilizer from these cows for ranch tracts would be about \$30 per cow, and at the end of a year, working the cows and the ranch together, I feel sure no one man in fifty would want to cut out the cows. If he did he must acknowledge that after a few years he would have to buy commercial fertilizer for his ranch and pay

cash for it. None of us need expect these lands to forever bear big crops of fruit or anything else without giving back something to the soil to pay for all we take out of it, and there is nothing so cheap and so beneficial as barnyard manure. We Americans think the European farmer is so far behind the times. The experts of this country have discovered by statistical reports and examination that we produce per acre but a little more than half what our European neighbor does, and the reason of it is that he puts the labor and the manure onto his farm. In Germany they have concrete pits where every bit of manure from the stock is saved, mixed with straw and weeds and allowed to rot, then when the ground is plowed in winter and spring a man follows the plowman and deposits the manure in the bottom of the furrow and it is plowed under, so it will rot. In Europe, when you lease a piece of ground from a landlord, your lease specifies what proportion of your farm land you are allowed to cultivate, how much you shall have in hay, and if you lease ground that has been occupied by a former tenant you have to pay him for the straw and manure of the preceding year that is left on the place, and one of the conditions of every farm lease in that country is that you shall haul no hay from the farm and you shall put so many loads of manure onto

the farm, and everything that is produced on the farm, except on a stated number of acres that you are allowed to put in petatoes or vegetables, shall be fed to the stock and sold on foot or dressed. They have found that if they don't look after keeping up the fertility of the soil their revenue and income from these farms is greatly reduced in a very short time. In that country they follow the precedent of leasing for a term of fourteen to twenty-one years. This gives the renter the satisfaction of knowing that he is going to get the benefit of the fertilizer he puts on the place. We are new in the business of keeping up the fertility of our soils. Our farmers are burning their weeds, their wheat stubble and all the dry grass that grows around the place. The time will come when we will be like

the European country. We will be compelled to save everything that grows on the farm that can be used as a fertilizer.

In conclusion I will say I know of no better way in which the fruit farmer can make a guaranteed success than by using a portion of his farm for the raising of livestock in any way he sees fit. The principal thing is to convert what you produce on a portion of your farm into fertilizer for that farm. Hogs, sheep, cows and poultry are each beneficial and profit earners in accordance with the way they are handled. The dairy cow has this advantage: you get your cash every week or every month for her work as she goes along, and it gives you money to take care of your orchard in case it is an off year and you have no income from the same. Directly adjoining my hill-top farm in

the Walla Walla country I am sowing alfalfa and preparing to build a silo and to raise corn, and I do it for no other reason than to diversify and not have my eggs all in one basket, and to assure you that after my apples have borne their heavy crops for a few years they are not going to deteriorate and wear out for lack of soil fertility, and I think I can hand down no better reputation to the community in which I live, other than being a good neighbor, than to be able to have it said, "The farm is much better now than when he took it twenty years ago, and he left the land better than he found it." If we fruit growers can mix some of these ideas with our desires to make money with our fruit lands we will be better farmers and better men in the communities in which we live.

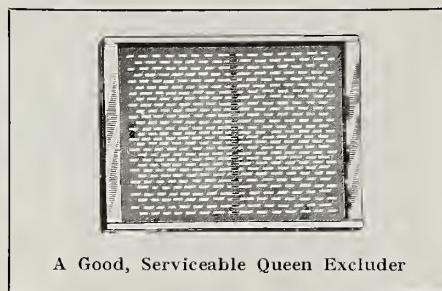
Beekeeping for the Orchardist and Farmer

By H. F. Wilson, Entomologist, Oregon Agricultural College, Corvallis

BEKEEPING as a means of livelihood has been followed for centuries and will probably continue as long as bees and man exist together. As a part of diversified agriculture bee-keeping is, considering the amount of money and labor involved, one of the most profitable enterprises of the day. The value of bees as pollinating agents cannot even be estimated, but it is a well known fact that more and better fruit can be produced with their aid. In addition, if proper care be given them, eight out of every ten colonies will produce from twenty-five to several hundred pounds of surplus honey each season, depending upon the locality and the care received. On the western side of the Cascade range the amateur should work for extracted honey, as the flow comes on so slowly that the bees will gather very little for sections. And in view of the fact that bees will, under ordinary circumstances, produce twice as much extracted honey as comb honey, the first is the more profitable. Extracted honey usually wholesales at eight cents and comb honey at twelve and one-half cents per pound.

Buying bees at a fancy price is a practice which should only be followed in sections where ordinary bees cannot be secured. Buying hybrids or black bees at the right price is a first-class practice, if one understands the introduction of new queens. Pure Italian bees, leather colored or goldens, and in

a movable frame hive, should not cost more than six to eight dollars a colony. Black or hybrid bees can usually be secured for from one to five dollars per colony. The latter are usually in old



A Good, Serviceable Queen Excluder

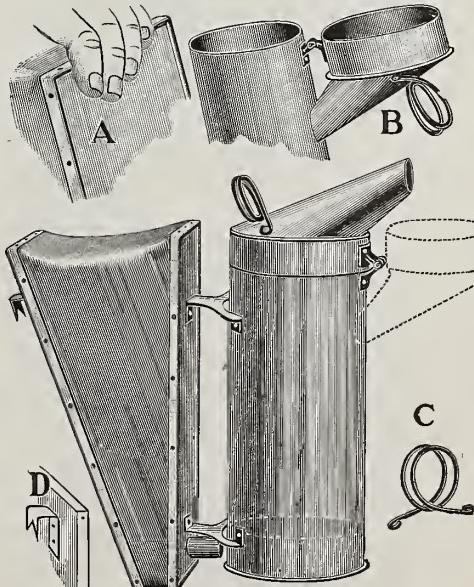
boxes, barrels, etc., and should be transferred to modern hives. Good Italian queens can be secured for \$1.50 to \$2 apiece. A good substantial hive can be secured for \$2.10, one colony of hybrids or blacks for \$3.00, and one Italian queen for \$1.50, making a total cost per colony at the beginning of \$6.60. The person who has never handled bees should start with not more than four or five colonies, as handling and manipulation become easier. These can be increased to fifteen or twenty colonies by division, so that a fair sized apiary can be secured in four or five years from a small start.

The beginner's outfit should consist of from one to five colonies of bees at an average of \$8 per colony, \$40; five complete hives, \$9; one smoker (Cornel), \$1.25; one bee veil, 50 cents; one hive tool, 15 cents; five Alexander feeders, at 30 cents each, \$1.50; one wire imbedder, 20 cents; one 1-pound spool of No. 30 tinned wire, 35 cents; one-half dozen queen excluders, \$3; twenty extra Hoffman frames, 80 cents; one pair gloves without fingers, 45 cents; a total of \$57.20. In addition to the above equipment the beginner should secure a copy of an up-to-date book on bees and subscribe for one of the several bee journals being published at this time. Bees may be secured at any time of the year, but the writer recommends

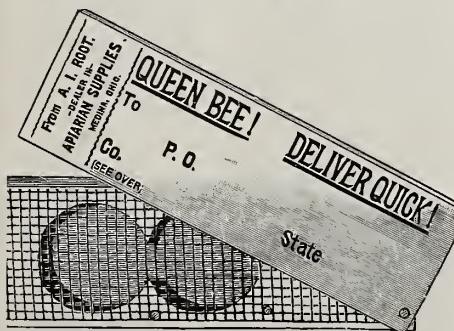
buying them in the spring, and putting them in shape before the honey flow comes on too rapidly.

In the western part of Oregon and Washington many colonies of bees starve for lack of honey in the spring. In February, March and April often-times warm spells come on, which cause the bees to become quite active, and they start rearing their brood. In many cases the supply of food is short and is soon used up. Prolonged spring rains usually follow, and the bees, being unable to gather nectar, starve. The beekeeper should, therefore, go through all of his colonies in the spring and if the food supply is short, feed the bees sugar syrup. Sugar syrup is made by adding equal parts of sugar and water. Colonies weak in numbers should be given plenty of food, so that brood rearing can continue in full force. The stronger the colony, the better the production of honey.

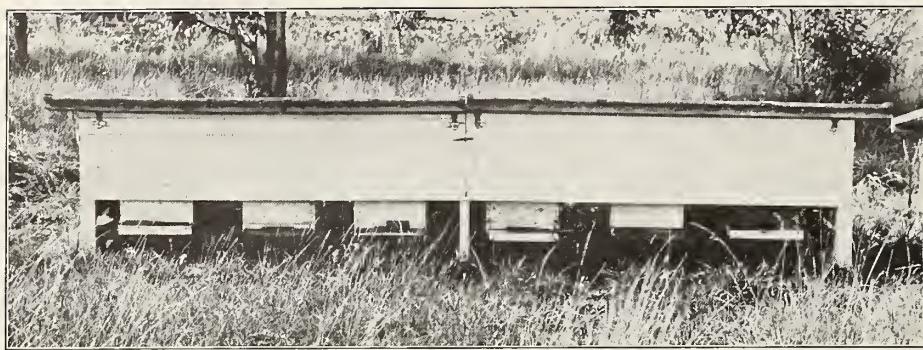
Most large beekeepers have practically no trouble in controlling swarming, but to the amateur swarming is



A Good Smoker, Root's (Improved Cornel)



A Mailing Cage for Queens



One of the Colony Houses at the Oregon Agricultural College—Bees in Winter Quarters

ever a troublesome problem, because the bees are sure to swarm during his absence or at other inconvenient times. There are many different recommendations for the prevention and control of swarming, all of which work at times. However, giving an abundance of room seems to be good advice, and will often-times keep colonies from swarming. The writer believes that clipping one wing of the queen to prevent flight is the safest and most satisfactory method for the small beekeeper. Keep supers with plenty of empty frames on the hives and keep the ground clean about the hives, so that when the queen comes out she can be found and put back. The bees that go out with the queen will come back as soon as they find that she is not with them. During swarming season occasion should be taken to observe the colonies every day for indications of swarming.

Transferring bees from old boxes, barrels, etc., to modern movable frame hives is an absolute necessity for best honey production. This operation is best done in the spring, just after the honey flow starts. The easiest and most simple way is to prepare a modern hive with each frame containing full sheets of foundation, or, better yet, if you have them, replace two or three of the new frames with drawn-out frames. Then the queen can start laying eggs without delay. Remove the top from the new hive and the bottom from the old one. Then place the old hive on top of the new one, first inserting a queen excluder between the two. In many cases the shape of the old hive will necessitate making a special board to lay between the two hives, with a hole cut to fit the smaller of the two. The top of the old hive should then be removed and the bees smoked down. Take plenty of time and smoke them gradually. After most of the bees are down remove the upper hive and look around on top of the excluder for the queen. If she is on the excluder, she can be removed to the new hive, and the excluder replaced so that she cannot get back into the old hive. If she is not found the first time, go through the same operation until the queen is located. Now replace the old hive on top of the new, put on the cover and let stand for twenty-one days, at the end of which time all of the bees in the old hive will have hatched out, and the transfer has been made without the loss of bees. The old hive can be

broken up, the honey saved or fed back to the bees and the wax melted for sale. There are several other methods of transferring, but this is the simplest and most economical.

In buying queens, locate some reliable dealer and ask for prices, so that there will be no misunderstanding. Each queen will come in a little mailing cage by mail. The cage is also used in introducing the queen. One section of the cage is filled with bee candy. At the end of the section containing the candy will be found a small hole covered with a strip of paper. It is through this opening that the bees reach the queen and liberate her. As soon as possible after the queen reaches the beekeeper remove the old queen and destroy her or confine her so that she cannot get back into the hive. Then insert the mailing cage between two frames so that the bees can get at the end designated, and replace the cover. If the bees have not cut away the cardboard on the following day, it is best to remove it for them. Under ordinary circumstances it will not be necessary to look at them again for six or seven days, when the queen should be laying eggs and the colony progressing as usual.

Management for Honey Production.—In Eastern Oregon and Washington the supers can be placed on the hives earlier than in the western portions of these states. In the latter sections it will be well not to super the colonies until after the spring rains begin to moderate. In sections where the honey flow comes on rapidly and in great abundance, section honey can be produced. These conditions readily apply to alfalfa, clover and fireweed. Where the weather is cold and rainy, and the honey flow comes on slowly, extracted honey should be produced. In the Willamette Valley and Coast regions the latter method should be followed. In all cases foundation should be used in sections and frames. As fast as frames or super sections become filled they should be removed, to prevent travel stains and to give the bees plenty of working room. After the honey flow is over remove the supers and give the bees a chance to fill up the frames in the body of the hive. Then, before winter sets in, go through all of the hives and see that the food supply is sufficient for the winter. Each colony should have about twenty-five pounds of honey for winter stores.

Space is too limited for a detailed account of any one subject, and the writer suggests securing a copy of one of the following books and bee journals: "Langstroth on the Honey Bee," revised by Dadant. Dadant & Sons, Hamilton, Illinois. "A B C and X Y Z of Bee Culture." A. I. Root Company, Medina, Ohio. "The American Bee Journal," published at Hamilton, Illinois. "Gleanings in Bee Culture," A. I. Root Company, Medina, Ohio. "The Beekeepers' Review," the official organ of the Oregon and the National Beekeepers' Associations.

Personal Experience with Bees

By C. G. Rogers, Freewater, Oregon

THE first thing I ever owned when a boy was a stand of bees, and the keeping of bees has been one occupation of my life which has afforded me much enjoyment. Raising bees is like all other businesses. Generally there is quite a profit in them and some seasons they do extra well; sometimes their product is short, like other crops. A few stands of bees on the farm I have found to be very profitable. Of course, too many will consume the feed, the same as too many cattle on a range. Every farm ought to have a few stands of bees and take care of them in a systematic way; give them all the opportunity possible, and the farmer will get a profit which he could get in no other way. Now as to pollinization, will say that no fruit grower can succeed without being in range of some bees, either his own or someone else's. When I settled in the Walla Walla Valley my neighbor had a few pear and apple trees, the fruit of which invariably was without seed and had but little core. I thought this strange and wondered at it. In the fall I bought some bees and brought them home, and the second season his pears and apples were big and fine and all had seed and cores, and again I was astonished to see such a change in the fruit. It was talked about by all the neighbors. I soon learned that this was wholly due to the work of the bees as pollinizers. All fruit men will receive a greater profit through them as pollinizers than they will from the honey crop, but this fact is not generally recognized or appreciated. The experiment station of West Virginia has demonstrated this fact beyond all doubt in the East. In hothouses where they raise cucumbers they have to install a stand of bees in order that the cucumbers be pollinated and mature perfectly for the pickle factory. In A. I. Root's A B C book on bees are shown a great many of these facts. In closing, will say I hope this article will be of some benefit to the enterprising farmer.

Yakima Valley, according to Mr. Fred H. Thompson, will ship about 5,000 cars of fruit, including all kinds, during the year 1913, that total including 250 cars of pears, 63 cars of cherries, 1,800 cars of apples, 1,800 cars of peaches, and about 1,800 to 2,000 cars of other fruits making up the balance.



Vegetable Growing Between the Rows of Trees in the Walla Walla Valley

This valley is celebrated for its wonderful output of vegetables, and a good income can be obtained by growing vegetables between the rows of trees in connection with fruit growing.

Importance of the Live Stock Industry

C. C. Colt, President Union Meat Company, before the Portland Ad Club

THE calling of flockmaster and herdsman in the olden times was among the most important of the industries, and today we still look to them for our food and our raiment; and the barter and sale of livestock is still one of our most important industries. During the past ten years this country, however, has been undergoing marked changes, and the American people, who have been so profligate with their wonderful resources, are brought to realize that we have problems to meet which are affecting the whole business world, as well as the wealth and prosperity of our nation. The conservation of our forests and of our streams is only one phase of this realization, and we are brought face to face with the problem of conserving our meat supplies.

I will beg your leave for a few moments to handle this subject perhaps in a national scope, rather than in its local scope, and take up the rest of it later. Some newspaper agitation and publicity was given a short time ago to a discovery which was suddenly made by the National Housewives' League of New York that meat is high. The president of this organization, Mrs. Julian Heath, of New York, made the discov-

ery, and determined at once to find out the cause. She sent a telegram to President Arthur G. Leonard of the Union Stock Yards Company of Chicago. Why she did not send it to the packers has not yet been discovered. The telegram reads like this: "The National Housewives' League, representing the housewives of the country, request your explanation of the present rise in the price of meat. Our investigation brings out the fact that retailers state they are unable to account for the sudden jump. The league awaits your version of the facts before going further. Signed: Mrs. Julian Heath, National President." She received a prompt reply, reading as follows: "Replying to your telegram, the receipts at this market"—that is, Chicago—"from the first of this year to date, compared with the corresponding period of 1912, shows a decrease of 121,600 cattle and calves, 300,000 hogs, 225,000 sheep; a total of 646,000 meat animals, amounting to a shortage of 200,000,000 pounds of meat for the period. I think this fully answers your inquiry. Signed: Arthur G. Leonard, President."

Now, gentlemen, I have had prepared for you today this chart which you see here on this wall, and on it we have

traced a relative divergence of the figures shown by the dotted line the population of the United States from 1902 to 1912. With the exception of the years 1911 and 1912, the figures are taken from the United States statistics. The straight line, also taken from the United States Bureau of Statistics, shows the beef cattle in the United States, by years. You will note how during the period from 1902 to 1907 there was a comparatively uniform range; that is, compared with the population, but from 1907 to 1912 you will note the marked decrease in the supply, and particularly 1911, which dropped from 46,000,000 to 40,000,000 head. The zigzag line shown here represents the average selling price of carcass beef in Chicago for nine years. The records for 1902 and 1903 were not available; and from that you will note the fluctuation here follows pretty well the increase in population, and as the supply of cattle decreased the market advanced. These variations here are occasioned at different seasons of the year, when the class of cattle, perhaps, did not command as good a price as at some other season of the year.

Now, I wish to bring out the fact here that these figures represent only

the carcass price. Some few years ago the Ad Club of St. Joseph, Missouri, gave a very interesting meeting on the subject of the price of beef, and there they had a carcass of beef which was actually cut up into the primal parts as sold over the counter by the retailer and was there demonstrated, the difference in the value of the cuts, and the percentage of the different cuts as they are served to the consumer. From this chart you will see that in 1912 the price reached nearly eleven cents a pound for carcass beef; that is, the average price of steers and cows and all carcasses that were sold in Chicago. However, during the period some of the choicest cuts, such as ribs and loins and cuts of that sort, sold for as high as twenty-five and twenty-six cents a pound, owing to the extreme demand for the choicest cuts of meat. This, I think, will give you a reasonable idea of how the demand and the supply regulate the market, and this is only repeated here in Oregon. I have not the figures available which show on a chart of this kind how Oregon is affected, but the same principles apply, that when the supply decreases the market rises.

Now, the question arises, "What is causing this decrease in the supply of cattle and livestock generally?" There are many versions, but the principal ones, and the most reasonable ones, seem to be that the cutting up of the large ranges of the Middle West, that is, the eastern slope of the Rocky Mountains, is one of the first causes. Another is that the average Western farmer has made up his mind that he wants to be a grain farmer or a dry farmer, or something of that kind, resulting in a robbing of the soil and taking away the fertility, without putting anything back upon it; and still another reason, and I think one of the most potent reasons, is the fact that those who have prospered in the livestock business and have made their money in the last twenty years have raised families who,

BETTER FRUIT

instead of living on the range and continuing the business of their fathers, would rather live in cities and go to grand operas and ride in automobiles and think of that sort and invest their money in securities and sell out their herds. This has actually taken place in many communities, leaving the country practically barren of livestock, which has been up to the present time its salvation, from a financial standpoint.

Now, coming down to our own Oregon country, where these conditions have confronted us, the problem has been what can we here do to overcome the difficulties and restock our ranges and our farms. Less than two years ago a company was formed with headquarters at the stockyards at North Portland, known as the Portland Cattle Loan Company, similar to companies of the same character that are in existence in the Middle West. This company through its efforts has made it possible for the furnishing of funds to the extent of between five and six millions of dollars in the territory tributary to Portland and to Oregon for the livestock people. In other words, a man who had livestock and no feed could, if his standing was sufficient, get the money to buy the feed and feed his stock, and the man who had feed and no cattle could get the money to buy cattle and feed his stock. Thus it has been made possible for people here to actually secure the funds which their local banks were unable to provide them with, on account of the banking laws, and have made it possible to not only receive \$4 and \$5 a ton for their hay, but to feed their hay to their cattle, and thus realize as much as \$15 or \$20 in some cases per ton. Men who had never made any money in the cattle business before have made good money in the last few years by following this plan, and the business is constantly growing, and, we think, with excellent results.

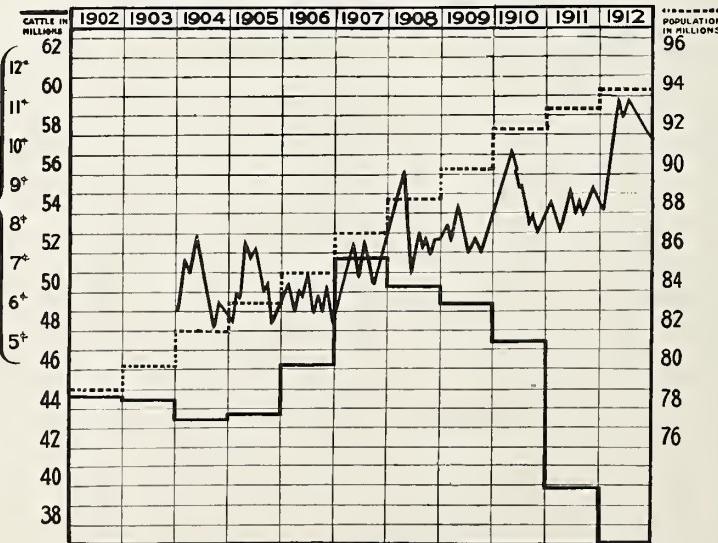
In addition to this company, there has also been formed within the last

year a company, with headquarters at the stockyards, known as the Portland Feeder Company. This company is in the business of buying and selling feeder stock. By that I mean cattle and sheep that are not in shape for market, but which are in condition to go into feed-lots. This company during the last year was responsible for bringing into the territory tributary to Portland and to Oregon something over 20,000 head of cattle from Texas, New Mexico and Arizona, and placed these cattle on the farms and in feed-lots here, and they are at the present time, some of them, being marketed, and more to come. This made it possible for people who could not find cattle when they wanted them to send their orders here and have them filled, and in this way we are endeavoring to put the tools into the hands of the people and to teach them, in a measure, how to help themselves. We are also following a campaign to encourage the people on the range to keep their cows and their calves—instead of selling them off as fast as they could, we are encouraging them to keep them until a certain age, and thus increase the supply of cattle in the only way in which it can be increased, and that is on the range.

I had the pleasure some two years ago of speaking before your club, at which time I believe I made a statement that a campaign was then under way for the increased production of hogs in this territory, which are playfully called "mortgage lifters," but they mean exactly that. The campaign which was started some several years ago, and which at that time was well under way, has borne good fruit, and today I am happy to bring you the message that the work is growing wonderfully, and I want to quote you some figures here to prove what I have to say. In 1906, 1907 and 1908 the company which I represent here imported from the State of Nebraska about 80 or 90 per cent of the live hogs which we slaughtered—about 1,800 miles. It was very expen-



CHART SHOWING THE RELATIVE DIVERGENCE IN THE CATTLE SUPPLY,
THE POPULATION OF THE UNITED STATES
AND THE WHOLESALE PRICES IN CHICAGO.





Angora goats are raised quite extensively in Southern Oregon and the Willamette Valley. Whenever an orchardist has pasture land or grows cover crops a small flock of goats will produce a very valuable income.

sive and very annoying. We felt that it was unjust, not only to ourselves but to the farmers and livestock people of this territory, to take their money for the products which we manufacture and send it back to the farmer in Nebraska who was raising the hogs. In reality, we were depleting the pocket of the Oregon farmer and the Oregon consumer and giving it to a state 2,000 miles away from here. In 1911 the total receipts of live hogs at the Portland Union Stockyards was 85,273, of which number 29,624 originated in the State of Oregon, 11,055 from Idaho, 6,083 from the State of Washington, 4,722 from California and 33,789 from Nebraska. In 1912, one year later, out of a total of 120,953 received at North Portland, the State of Oregon produced 65,215, Idaho 33,204, Washington 11,102, Montana 166, California 5,307, Wyoming 221, and from Nebraska only 5,738. And, gentlemen, we are going to have a better record this year than we ever had, for there has not been a live hog imported from the State of Nebraska into the State of Oregon since August of 1912, and the prospects are that there will not be a single one come forward during the present year.

As to the magnitude of the livestock and packing house industry, I think you perhaps are all more or less familiar, but inasmuch as this is, in a measure, an infant industry of our state, I wish to call your attention to some more statistics taken from the United States Census Report of 1910. We had scarcely gotten under way at that time; in fact, our plant at North Portland was opened in March of 1910. In Oregon the slaugh-

tering and meat packing industry, with only fourteen establishments in the state, ranked third in the amount of business done in the state, lumber and lumber products, with 713 establishments, being first; flour and grist mill products, with 114 establishments, ranking second. I firmly believe that history will be repeated in this state before very long, and that the packing house industry will be second to none.

By comparison, I wish to call your attention to the chart here, and this circle which shows Oregon's harvests for the year 1912, taken from the Oregon Almanac, which you have no doubt all seen. You will note here that the livestock harvest for the year amounted to \$33,000,000. It was greater than the dairy, the wheat and the wool industries combined. It was five times greater than the fruit industry, and greater than any other three industries in the state put together. Now, this is a visible example, gentlemen, of what this means in resources to our state and our community, and the turning over of this vast amount of wealth, which has a daily cash value in the markets of the community, is of untold benefit to the farmer who is seeking to build up his resources and to make of himself a useful citizen.

There is some interesting information about the ramifications of this business which I think, perhaps, if you will bear with me, you may be interested in. You have all of you heard it said "that nothing gets away but the squeal." I want to read you here a little list of the products which I have prepared, showing the vast amount of

industries which are both directly and indirectly affected by the livestock industry. An example of the industrial utilization of waste, one, moreover, with which the general public is fairly familiar, is to be found in the meat slaughtering centers of the country. The beef and pork that hang in every butcher shop represent not more than 56 to 58 per cent of the animal on the hoof. There was a time when the remaining 44 per cent was simply thrown away and practically all wasted. Now it is safe to say that nothing escapes the boiling kettle or the machine, and that every part of the steer is utilized from the tip of his horns to the last hair of his tail. Indeed, a large percentage of the American packing industries' profit is made from the chemically and mechanically treated by-products of the abattoir. The hides, as might be expected, are sold to tanners. Albumen is extracted from the blood and passed along to the calico printer, the tanner and the sugar refiner. The bones are utilized for a score of purposes. Their residual fat and gelatin are respectively employed for soapmaking and for the manufacture of various articles, such as medicine capsules. The feet are sawed off after the oil is extracted and are made into toothbrush and knife handles, our chessmen and combs. The horns, sawed off at the tip, are split and ironed out flat to furnish stock for buttons, combs and brush backs. The sawed-off horn tips are fashioned into pipe stems, and the horn scrap is ground up and turned over to the farmer for fertilizer. Neuralgia, nervous debility, St. Vitus' danee and



Poultry Scene in Sherman County, Oregon
Chickens are something that every fruit grower can raise as a side line, and good money is to be made in this business in connection with fruit growing.

diseases of that nature and mental disorders are treated with the products from the gray brain matter in calves. From the glands and membranes, pepsin, thymus, pancreatin and other gastric aids to the digestion of the "bon vivant" are extracted. Bristles, of course, are used for brush making, and the teeth for studs and buttons. White hoofs are exported to Japan and come back to us as art objects. Striped hoofs are worked up into buttons and horn ornaments. Black hoofs are either employed in the manufacture of potassium cyanide, which is needed for gold extraction, or ground up for fertilizer. Oleomargarine, better known as butterine, is obtained from the fats, and so are tallow, stearin and glycerin, and all three are indispensable to the manufacture of soap and candles. A palatable preparation, prescribed by physicians for tissue building and the production of red corpuscles in human blood, is made from the red marrow of young animals. Gelatin, or, in its lower grades, glue, is obtained from the sinews, hide trimmings, bones, skins and hair scraps. Fertilizers are produced by treating the viscera, the short hair and refuse. Long hair is shipped to the spinner, and by him sold to the mattress-maker. Thus it happens that the carcass of a single beef may enter into several hundred articles, and that we not only eat steers, calves and hogs, but brush our hair and teeth with them; we prescribe them for our mental and physical ailments; we wear them as our clothes; we sleep on them; we ornament our rooms with them; play games with them, and raise crops with their aid. Each of the industries built up on the utilization of slaughter house by-products has its own waste in turn. After the abattoir has disposed of its hides, for instance,

a certain amount of waste is incurred in tanning them. Very little of this waste, however, is not ultimately converted into useful products. Spent tan is sold as fertilizer and is also utilized to a certain extent in paper-making. Leather trimmings and scraps are pressed and rolled into sheets with some glutinous composition to form artificial leather, or are utilized in the production of printing inks, dark pigments, covering substances and blacking. It is safe to state that hundreds of patents have been granted for ingenious means of working over bits of leather which the ordinary man would sweep away. Mixed with the bones of sheep and goats, leather scrap is transformed by one inventor into ivory veneer.

Another has devised a way of pressing leather shavings into boot and shoe heels and inner soles. What is called "shoddy" leather is made by grinding bits of waste leather to a pulp, which, after being ground and pressure applied, is formed into solid strips. Leather that no one else can employ is left for the glue-maker.

Now, gentlemen, these are only a few of the industries that are effected, and of the products and the daily use of the packing houses of the country. I could scarcely tell you in the time allotted me the various products which are consumed, in the way of boxes and nails and sugar and salt and spices and all of the supplies and tinware and things of that sort which go into our daily requirements. The subject, naturally, is interesting to me, and I trust that the information given you here today may be of some interest and perhaps a little better understanding of what this industry means to this country than you had before.

In closing, this campaign of trying to assist people to help themselves has another side to it, which to me, perhaps, is the most interesting. To be sure, we are not in business for our health; we want a legitimate profit and a legitimate margin for the capital invested; but there is a humanity side to this problem which helps us to keep going. By helping people to help themselves we believe that we can and are starting them on the road, if not to independence and wealth, at least to comfort and happiness, and by teaching men these problems which confront them of how to help themselves and how to get the most out of what has been given them, and how to produce things on the farm which will bring them in a livelihood, we are not only helping ourselves, but also the people in question, and eventually they will become free from the slavery of debt and despair and become happy and contented citizens.



Illustration Showing Bees in Connection with Orcharding in Grandview, Washington
Bees produce a good income and are a good side line for the fruit grower. In addition they are valuable in pollinating during the blossoming period.



Cover Crops Between the Trees in Yakima Valley

Yakima is a good alfalfa country, consequently a good country for stock as well as fruit growing. Fruit growers in this valley have realized the importance of cover crops. Cover crops will enable the orchardist to raise some stock, which will bring a splendid income.

Intercropping Vegetables in the Commercial Orchard

By Arthur G. B. Bouquet, Section of Market Gardening, Division of Horticulture, Oregon Agricultural College

THE intercropping of orchard land with vegetables is not by any means a new practice. In some of the oldest regions of fruit growing in the United States we find this feature of orchard work, and from replies to letters sent out by the writer to growers all over the country it is evident that this practice is carried out in many fruit growing regions. It is one that has succeeded admirably in some orchards while in others it has failed miserably. Probably the man who has made the greatest success of the business is Horace Roberts, of Moorestown, New Jersey, who has not only made a good deal of money with the vegetables themselves, but has also very materially improved the constitution of the orchards with which he has worked. There are many fruit men everywhere who oppose the practice, giving as their main reason "detriment to the trees and no money in the filler," but a majority of them have never given the matter very much thought and still fewer have given it a fair trial. In general, where the grower has properly inquired into market conditions and understands to a fair degree correct methods of handling the filler, there has been but little trouble experienced. One of the reasons why the intercropping of vegetables between trees has been more or less unpopular is due to the fact that it has been so abused as to very materially damage the trees and make but little on the filler. I well remember the sight of an orchard which I saw not long

ago which was so intercropped with rhubarb (a crop never to be grown between trees) as to make it apparent that the owner was growing a rhubarb crop and trees between. These are the kind of men who have made intercropping a bad business.

To mention a few possible pitfalls would be to put the grower wise to the problems of intercropping. In the first place the difficulty of finding a suitable market looms up. So many growers have planted a lot of vegetable stuff and then hunted around for a place to sell it, regardless of any previous consideration as to where it was going. With some storage crop like onions, potatoes or squash this might be reasonable, but with perishable produce like peas, beans, tomatoes and melons such a procedure is ruination. One must inquire diligently into local market conditions. Forget the commission man until the home market has been filled. This, you say, is easily done, and in some cases it may be true, but under my own observation I have seen a whole lot of stuff that was shipped in that might just as well have been raised by the fruit growers as not. The cannery has, in many cases, been a bonanza market for the fruit grower and hundreds have taken advantage of it. It still remains the most reliable market for the fruit growers with certain vegetables. There is no excuse for the fruit man to howl about poor markets when he plants with his eyes shut. Lack of attention to either trees or fillers has in many

cases brought about trouble. One must determine that the trees are the primary consideration and therefore must not suffer, but the grower must be equally determined that the filler should have the best care possible, or the whole expense of labor, land, time and money in general is gone for naught. A fruit grower is very often not a good vegetable grower and I have seen a goodly number fail simply because they did not know enough about the crop they were trying to handle. Growers have solved this question largely by planting easy growing crops and those which require a minimum amount of effort in the field.

What kind of crops are then to be advised for the fruit grower to handle? A diversification of conditions makes a definite answer to this question plainly impossible. For the man who is cover-cropping, early crops are more suitable, such as those maturing in plenty of time for him to get his land in condition for the same. A vegetable should be selected for its adaptability to the soil and climatic conditions of the orchard. There are many orchard soils in the state that ought never to have vegetables grown on them at all. The peach soils or alluvial sandy loams are excellent for the raising of early truck, while the heavier apple and pear soils in some parts are more suited to the growing of peas, beans, sweet corn and tomatoes. High elevations are not suitable for such crops as tomatoes, melons or beans, but onions, cabbage, cauli-

flower and such hardy vegetables do well at the colder points. It can readily be seen that with such varying conditions of market, soil and climatic conditions the question of choice of a filler is local. With the growing of some vegetable crops, as tomatoes or cabbage, there is necessary extra equipment of frames for growing the seedlings, otherwise the grower will have to reply on bought plants, and this oftentimes is a hazardous proposition, unless the very best can be obtained. There seems to be no denying the fact that bean and pea crops are the least harmful to the trees, due to their leguminous properties. White beans of the Lady Washington variety, planted in rows two and one-half feet apart after frosts have disappeared, have in many instances proved profitable.

They have been selling at five to six cents per pound of recent date and the above variety seems to mature in most sections in plenty of time so as to be harvested before frost. String beans, either for the cannery or for the home market, make good crops for the orchardist, the greatest work being in getting the pods harvested. Burpee's Stringless Green Pod, Refugee and Kentucky Wonder are the main varieties to be grown. I saw a splendid lot of Wonders being sent to our local market the other day, and at this time of year there is a splendid sale for them, as also would there be in the early summer.

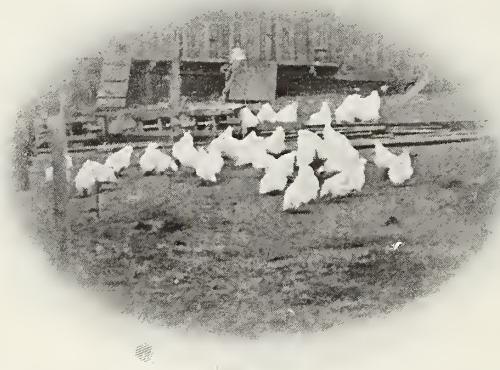
The combined orchardist and vegetable grower will have to realize that it is earliness that counts in the vegetable market. It's getting there when the other fellow is out. Most orchard soils will grow good crops of beans. Well rotted manure in the bean furrows will be beneficial, and the best seed should be obtained. It is very essential that harvesting of the beans be done at the proper season, before the pods begin to get too old and stringy. Land which has a warm slope and which can be worked early in the spring should make a good location for early peas, which can be planted as early in the spring as the land can be put into condition. Early Morn and Alaska are two of the hardest and earliest peas grown. Force them along with manure put into the furrows before the seed is sown. Potatoes are a crop which has been widely grown, in spite of the fact that they undoubtedly remove an element from the soil that is vital in orcharding. The ability to store this crop for suitable market conditions makes it one that cannot be overlooked. The aim of the fruit grower should be to grow a high class potato just as much as a high class specimen of fruit. This cannot be obtained except by superior seed and careful attention and possibly some spraying. On some light soils early potatoes prove profitable, Irish Cobbler being a good variety to grow. Potatoes will show up particularly well on land

that has been in leguminous crops in previous years. There is a terrible mixture in our potato seed stock and I do not see why some of our intelligent fruit growers should not make a success of growing a high class potato for seed. There is certainly a good demand for seed of the better order, for the seed item in growing potatoes is not a drop in the bucket in the list of cost items compared with the results accruing. Squash are an acceptable crop largely because they are storable and also because they are readily grown and thrive under many conditions. The margin of profit, however, is not large and will mainly depend upon the storage facilities of the grower and how well his crop will be kept. The Delicious is an excellent variety

tilizers properly used will prove valuable. Cabbage conditions are somewhat uncertain. The early crop grown on early silt or sandy loam soils brings fair returns, and the storage crop in the winter of the Danish Ball Head or Houser varieties will supply the markets until spring if properly kept. Late cabbage should be started by sowing the seed either directly in the field about the last part of May or the plants can be grown in a well prepared seed bed and shifted to the field during June and July. Heavy fertilization is required for this crop, and as it removes a good deal of moisture from the soil irrigation is decidedly valuable.

It is certainly not advisable to plant perennials such as asparagus and rhubarb in the commercial orchard. If such are desired it would be far better to cut out the trees entirely. I have not mentioned the possibility of growing roots. Where plenty of space is left for all orchard operations there should be no legitimate reason why these should not be used. They make possible continuous marketing through the winter if carefully put into storage at a cool temperature. Chantenay carrot, Detroit Dark Red beet and Hollow Crown parsnip are among the best varieties. If charity begins at home, then every fruit grower, before he launches into the business of commercial vegetable growing, should see that he has a good home vegetable garden as far as his opportunities and circumstances permit. It is depressing to see how many of our fruit growing friends have crowded their agricultural pursuits to the entire exclusion of the necessities of daily life. Every grower should see that his family is supplied with a few good vegetables, and this does not mean, as many suppose, a vast amount of laborious toil with no results. A small piece of ground is the basis of our operations, followed by a careful planning of crops, judicious selection of varieties, proper seasonal planting and some daily attention, and the fruit grower will not then have to load up his wagon from the grocery store with vegetables for his family, as many have been doing for a long time.

If a summary of some vital points in intercropping the orchard with vegetables were to be made I am sure the following would be included: Early vegetable crops are superior where growing conditions are suitable for the purpose of fall work in the orchard and the possibility of renewing fertility by cover crops. Large plantings of one or two vegetables are to be discouraged, because of the uncertainty of vegetable markets. Perennials should in no wise be planted. Vegetables have their soil adaptations just as much as fruits and it is waste of time, money and energy to try to adapt them to all conditions. Intercropping means extra fertilization. The filler must grow fast and it takes fertile soil to push the crop. Close planting to the trees is a mistake and is one of the reasons why many have never succeeded in making money at the game.



Poultry in Connection with Fruit Growing in Oregon Always Brings Good Income

and in many respects far and away ahead of the old run-down Hubbard, and should sell well in competition with the latter. Forty-five degrees is the storage temperature for this crop, and the specimens should be handled as carefully as the best apple if one wishes to keep them very long. The melon market is such a variable one that one almost hesitates to recommend it as a reliable filler. Melons do especially well following cover crops, and if the hills are individually manured and early varieties such as the Early Hackensack and Jenny Lind for muskmelons and Cole's Early for watermelons, are used, a crop should be obtained which will take advantage of the early prices. Onions have proved a very profitable filler in some sections of the state. They require a good deal of attention and this makes the crop a hard one for the fruit grower. Markets, however, are usually very fair for the crop and it is one that can be economically stored for spring sales. Soil conditions must be superior for this crop, the ground manured the previous fall and plowed under. Four to six pounds of seed per acre, sown in rows fourteen inches apart for unirrigated sections and eighteen inches apart for irrigated sections is the customary manner of handling the crop. Seeding should be done early. The Yellow Danvers is the best seller for local and distant markets. Clean weeding of the first weeds and thorough soil stirring will push this crop along. Commercial fer-

Value of High Bred Cows with Fruit Growing

By Dr. James Withycombe, Oregon Agricultural College, Corvallis

IT may appear as horticultural sacrifice to recommend the growing of any other agricultural crop than fruit in the Hood River Valley. Fruit should unquestionably be the dominant production of the valley, but it is believed subsidiary crops could also be grown with profit. There is a general tendency in all localities characterized by special crop production to unduly narrow the range of production at the expense of the best interests of the community. For example, in the exclusive wheat-producing sections many articles of food are shipped in that could be profitably produced upon the farm. These represent milk, butter, poultry, eggs and vegetables. This same condition prevails largely in all strictly horticultural sections, and Hood River is rather a marked example. There seems no reason why the common staple articles of food produced from the soil cannot be supplied at least in quantities to meet the home demand in this valley, especially poultry, dairy products and vegetables.

There is another and especially important weakness in the special crop production, and that is the almost total lack of means for the maintenance of soil fertility. This is an important problem and one that is growing steadily more serious. This nation has grown rich under the destructive system of capitalizing the natural fertility of the soil. The great national problem with which we are confronted today is soil conservation. The orchardist is equally culpable as the wheat grower in this respect. Apple production will drain the fertility of the land unless restitution be made. To obviate this it is thought practicable to keep some live stock in connection with orcharding, preferably cows. The keeping of a few cows and the proper conservation of the barnyard compost will be a fruitful supply of valuable plant food for the orchard. Single crop production must necessarily be more or less monotonous, hence live stock should prove a pleasant diversion.

In recommending cows for the Hood River orchardists no thought is given to common cows, but to a very high class of dairy-bred animals. Since the individual orchards are more or less limited in area and the arable land small in proportion to orchards the number of cows kept on each orchard farm will necessarily be limited. It would probably be wholly impracticable to maintain these as separate individual herds, but under a co-operative system could be made successful. The plan in mind is a system of community, co-operative breeding. First form an organization or club, then agree upon a breed of dairy animals and all members keep the same breed and maintain a high-class community sire. In this way the herds of the community would be practically the same as a large individual pure bred herd.

The whole transaction should be a strictly co-operative movement. A

board of directors and secretary-treasurer should be chosen and to them the general management of the organization should be entrusted. The foundation stock should be purchased by the carload and sold to members of the association at actual cost plus freight and proportionate expenses. One of the four dairy breeds should be selected, preferably in the opinion of the writer, Guernseys. This breed is recommended on account of its superior adaptability to the conditions under consideration. The Guernsey is a very docile, even tempered breed of dairy cattle, hence they do not fret or chafe under close confinement. The milk is very highly colored and possesses a superior flavor. The Guernsey is a very popular breed of dairy cattle and is steadily growing in popularity, hence the surplus stock meets with a ready demand at good prices. In fact the Guernsey is so popular at present that it is exceedingly difficult to secure desirable foundation stock at reasonable prices.

It would probably not pay to keep a common cow for simply dairy production under existing conditions in the Hood River Valley. The pure bred cow, in addition to her milk and butter fat production, would yield a handsome revenue from the sale of her offspring. A pure bred bull calf would readily sell for from \$50 to \$100 and a heifer calf for fully double that amount.

The dairy herds of the community should be operated as a unit. The secretary should be both the selling and purchasing agent of the organization. In fact the secretary should have a copy of the pedigree of every animal owned by members of the association. All sales of stock should be made through his office. The secretary should also assume the responsibility of disposing of all of the milk and cream and purchase feed and supplies in wholesale lots. For the payment of the services of the secretary a percentage from sales made for individual members should be worked out upon an equitable basis. In this way the dairy business of the community could be conducted in the most economical manner. A small receiving station should be provided and perhaps a warehouse for storing supplies. Cream in either small or large lots should be received upon certain days of the week, samples of each lot taken for testing and the whole shipped in bulk as one lot. In this way the owner even of one cow would have the same advantage in marketing as owners of much larger herds.

High-class sires should be purchased as required by the board of directors. In this way the standard of the whole dairy stock of the community would be steadily elevated, and Hood River would soon become as famous for its Guernsey cattle as it is now for its high-class fruits.

At a convenient season each year a show of dairy cattle should be held. This will give breeders a chance to

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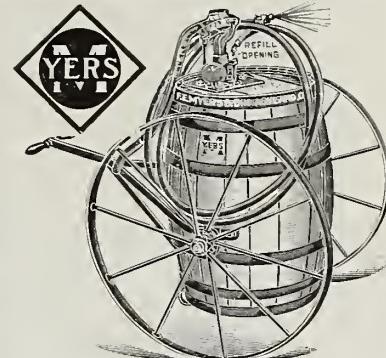


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make comparisons and stimulate interest in producing the highest class of dairy cows. In fact this annual event could be made of state-wide interest and breeders would come from a distance with the hope of securing some high-class foundation cattle.

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Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

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SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance
Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

This edition of "Better Fruit" is called "The Diversity Edition." It is intended to show the value and importance of the various products that can be produced in a practical way in connection with fruit growing. "Better Fruit" is always progressive and endeavors to anticipate the needs of the fruit industry and has published many splendid editions on various subjects of vital importance. During the past year, realizing the importance of the marketing problem, "Better Fruit" issued a splendid number on this subject in March, which was followed after with other articles about marketing of fruits. Last year's conditions showed the importance to the fruit grower of saving the waste, the necessity of canneries, evaporators and by-product institutions, consequently "Better Fruit" published in June an excellent number devoted to this subject.

Some years the fruit crop is heavy and prices low. Other years the crop may be light, but prices high. This in itself is sufficient to indicate to the fruit grower the importance of producing something else that will bring him an annual income that will run more evenly. Consequently this issue contains a number of articles that are intended to deal with products that can be grown by the fruit grower, which will bring him an additional income and help to distribute his income during the entire year.

The fruit grower, at certain times of the year, needs extra help and much of it. By engaging in a few side lines the fruit grower can maintain some steady employees, which will be found a great help in superintending the pick-up employees that the fruit grower must engage during the harvesting sea-

BETTER FRUIT

son. A few experienced men with a crowd of green help will do much to eliminate the waste and insure careful handling of the fruit, which is very necessary.

Bees.—A knowledge of bees is necessary to care for them properly and produce good results in the way of honey. An orchard is an ideal place for bees during the blossoming period, as ample opportunity is afforded the bees for all the food they want to be converted into honey, enough to last the entire season. Good incomes are being realized by fruit growers who understand the business well enough to maintain a small apiary. There is not only good money in the bee business for the orchardist who will look after it, but there is additional value which cannot be well estimated coming from the work done by bees in pollination. In fact, it is generally conceded that bees are a great factor in pollinating and orchardists who maintain a sufficient number of hives are firmly convinced that the trees yield a greater quantity of fruit and of better quality on account of the work done by the bees in carrying pollen from one variety to another. In an experiment conducted by the Oregon Experiment Station at Corvallis the pollen was applied with a camel's-hair brush from one variety to another on branches of various varieties. The experiment showed very conclusively that with proper cross-pollinating the apples on these limbs developed far more perfectly than other apples on the same tree which were self-pollinated. It is the general opinion that orchards containing several varieties yield and produce better than the orchard limited to one or two varieties. Occasionally an orchardist who has only one or two varieties in his orchard disputes this, ignoring, however, the fact that his neighbors have a number of varieties and his orchard is pollinated by the wild and tame bees that fly from his neighbor's orchard to his.

Dairying is one of the largest and most profitable industries of the Pacific Northwest and is a source of steady income to the dairyman the year round. There is no reason why every fruit grower should not keep a few cows. Creameries and cream routes should be established in every fruit growing section. With the present system of electric lines which are being built in our valleys, and with the use of automobile trucks, arrangements can easily be made for routes to collect the cream from every fruit grower along the line. Every fruit grower ought to keep a few cows. If his farm is not entirely set to orchard, a small portion should be seeded to alfalfa or clover for the purpose of maintaining a small herd. Our orchards are now demanding cover crops to keep up the supply of humus and a certain amount of nitrogen, and the day is coming when every fruit grower will continually have a part of his orchard in cover crops, which

would supply ample feed for a number of cows, in accordance with the size of his place and the amount in cover crop. In addition to the income received from dairying, a few cows have an additional value to the orchards in the improvement of the soil by continuous manure, as afforded by the herd.

Poultry.—Poultry is one side line which fits in beautifully in connection with fruit growing. Every fruit grower and farmer can easily maintain and care for a flock of chickens during the entire year without interfering with the work in the orchard. A moderate flock of chickens will forage for themselves, reducing the cost of feeding, and with a free run will remain in a healthy condition. It is comparatively easy for a fruit grower who understands the care of chickens, or for one who is willing to learn, to manage one hundred chickens or more in the orchard, providing himself with a good income from the sale of eggs and poultry.

Vegetables.—Any fruit grower can devote a space between the rows of trees, more particularly the young trees, to truck gardening. This will mean an extra income for him during the spring of the year when the demand for vegetables is good and prices high. One fruit grower with ten acres who kept a small flock of chickens and a small vegetable garden not only cared for his orchard and did all the work himself, but looked after his garden and his chickens, realizing from the sale about \$360 in one year, or practically \$30 per month. This sum is sufficient to pay the grocery and meat bills of a family of two or three during the entire year.

Hogs.—The excellent articles in this issue showing the money in hogs leaves very little to be said editorially on this subject. However, particular attention is called to the fact that since the railroads and the experiment stations have been advocating the raising of more hogs in the Northwest the imports from Nebraska have decreased from a very large figure to nominal quantities. Every fruit grower can maintain a few hogs. They breed prolifically, are easily cared for and always bring a good price.

Sheep.—Already quite a few fruit growers have engaged in a small way in the sheep business. There is a profit in raising sheep in two ways, by the production of wool and the sale of lambs, both of which pay well. With some pasturage or cover crops in the orchard it is a very easy matter to maintain a few sheep.

Goats.—Goats are being raised quite successfully in the Willamette Valley and Southern Oregon. The fleece commands a high price and the industry has proved very profitable to those who have herds of the right kind. The goat is easily kept and can be maintained in the orchard on the cover crops or in pasture or uncleared land.



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Fruit Growing and Diversified Farming

By O. M. Morris, Professor of Horticulture, Pullman, Washington

THERE has been a serious and worthy effort made in late years to reduce farm and ranch management to a business basis. The best methods of producing certain crops and the cost of producing them and the net returns from the market have been weighed and balanced. The most progressive men are trying to reduce their farms to manufacturing plants giving the maximum net returns. The net returns to the farm and to the farmer may be two different things, but the farmer must be considered first. The net cash returns are not directly indicative of the condition of the farm home and the bountifulness of the good things of life that the farm home is supposed to supply.

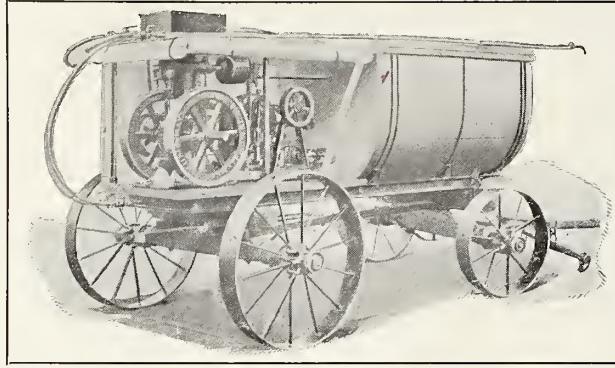
The business of the manufacturer or business man is almost if not quite independent of the home. It supplies the cash to purchase all of the necessities and the luxuries of the home, but furnishes very few of them directly or indirectly except through direct purchase. The home grounds, house or furnishings are not considered a part of the investment in the business of the owner. The business man must necessarily pay to himself, out of his business earnings, a relative high wage or salary. The business and the home of the farmer are inseparably linked together. His dwelling is a part of his investment in business and he can

make the farm or ranch provide a large proportion of the necessities of the home without reducing its commercial output. Many of the luxuries of home life can also be produced at a minimum cost. The farmer seldom considers the matter of paying or even crediting himself with a wage or salary. The money received for the farm produce pays the necessary expenses of the farm and home and any surplus is used as the owner wishes. The one-crop farmer has but one marketing period each year and depends upon that for all his revenue. This generally makes it necessary for him to pay more interest and ask for more credit than if his marketing season extended through the entire year. The farm does not supply generously the needs of the home and the family is placed practically on the same basis as the family of the merchant or manufacturer. This one fact makes the one-crop system generally an unprofitable one for the farmer, and the farm suffers more than does the farmer. It is practically impossible to maintain the fertility of the soil and a profitable vigor and productive capacity of plants in a one-crop system.

In growing the annual crops the entire root system, which is about one-half of the whole plant, and a part of the top is turned back into the soil each year. This adds decaying vegetable material and helps to keep the soil in a

mellow and porous condition, besides adding plant food. An orchard adds only its foliage to the soil each year, and this is only a small part of the tree growth each year. A good apple orchard removes from the soil each year more plant food than does an average wheat crop. The orchard is a permanent or continuous crop and under clean tillage the soil becomes less fertile each year and the physical condition less satisfactory for plant growth. Tillage cannot work the soil as deep or as thoroughly in the orchard as in the open field. Apple trees send their roots deep and reach a great volume of soil, and in that way are able to avoid rapid starvation. The young trees do not need all of the land for several years, but the owner usually needs the product of the space between the rows to pay running expenses while the orchard is coming into bearing. This open space in the orchard and an area outside equal to the entire orchard makes a better balanced farm and one on which the fertility of the soil can be maintained or improved and a better home life provided. There is a strong tendency to specialization and it is often worth while, but this should be approached gradually or developed by regular steps and not by sudden changes. The man needs developing as well as the land and the orchards. He should be able to study this special line of work and determine to some extent his capacity for it before risking all of his time, money and efforts in it.

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There are several crops that can be grown between the orchard rows to an advantage. Potatoes are grown by many with profit, but it is not a good crop to grow on a big scale for one or two years. It usually pays well for a term of several years. The clean tillage required usually fits in well with the orchard management, and if good judgment is used the orchard is not injured or retarded in its development. It takes two or three years for the potato grower to become well acquainted with his soil and to learn how to produce the best results, and the most money is made after this period.

Field peas can be grown as an intercrop in young orchards with profit and the soil improved at the same time. Some soils and localities are better adapted to this crop than others, but it is worthy of trial in all fruit-growing regions of the Northwest. This crop, when grown as a seed or hay crop, gives quick returns in cash or feed for hogs or cattle and is a good crop to grow on the land. Leave plenty of open space about each tree and plant the crop early in well prepared land.

Crops that belong to the grass family, as corn, wheat and oats, are more often thought to be directly harmful to the trees. The harm that results is more often due to a poor system rather than directly to the character of the intercrop. Corn can often be used with profit if reasonable space is given to the trees. It can be grown in many sections of the Northwest that have not given it a fair test and where such a

crop is greatly needed. Wheat and oats are less adapted to this use and do not fit so well into a crop plan or system of an orchard and small stock farm.

Alfalfa and red clover are used as cover crops in irrigated regions, but the method of management often adopted uses them as much as inter-crops as for cover crops. For this purpose the alfalfa is more popular. There are many orchardists who are cutting one crop of hay from their orchard land each year and report that their trees are in better condition than when the orchard was given clean tillage.

Intercropping must always be done with care, and when the crop grown is fed to livestock the manure should be returned to the land that produced the crop. Potatoes return almost the entire plant to the soil, and other crops should be so utilized that a maximum of decayed vegetation can be returned to the land each year. The best system of intercrop work will usually make possible the keeping of some livestock on the place and the production of a normal supply of butter, milk, eggs and meat for home use.

Diversified farming is the best for the average farmer. There are many men now on orchard farms that have never given any special thought to fruit growing until they bought the land that they now have planted to orchards. Fruit growing has been very profitable in the past and in all probability will be in the future, but many men are not capable of becoming expert in the work

to that degree that will make it yield them a good cash income sufficient to provide the good living that can be secured on the farm that has a good orchard and an equal or larger area devoted to intensive farming with some livestock.

In the irrigated regions one-half of the farm devoted to annual crops to be fed to cattle, hogs or poultry or to all of these will supply fertility to the land and make the place much nearer self-sustaining than it can possibly be on poor crop years or years of poor market conditions, as in 1912. There are some few locations where fruit production has been so regular and profitable that the above statement will not hold true, but they are exceptions and are quite rare.

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Our method is simple and direct, without frills or secrets; connections in every market of consequence; an experienced and capable organization, trained in the handling of Northwestern Apples and Deciduous Fruits. By specializing in these products and taking on no more than can be handled with our *personal* attention, we have been steadily successful in marketing them.

Crop marketing is the big problem confronting every Northwestern fruit man today. If you aim to secure *better marketing* as well as better fruit, you will write us now and ask us to explain our method.

DENNEY & CO., Chicago

Side Lines in Fruit Growing

By W. S. Thornber, Lewiston, Idaho

THE one crop system in orchard work is proving just as unsatisfactory to hundreds of fruit growers over the Pacific Northwest this year as it always has to grain growers for generations. Farmers as a rule all over the United States are coming to realize as never before that it is impracticable to endeavor to maintain the soil fertility upon the basis of a one crop system, and that if their farms are to be profitable a combination of crops and stock must be worked out for each district. Fruit growers for generations have felt that their occupation was wholly distinct from every other phase of agriculture, and that the combining of it with any other form of soil tillage materially increased the risk of success. But the long wait from the planting of the orchard to commercial crop returns, with nothing but clean cultivation, has changed the viewpoint of many a fruit grower. Until now many looked upon the unproductive interval between the planting and commercial production of the orchard as the one serious obstacle of the industry.

The one crop orchardist, whether he be an apple, peach or pear grower, sooner or later must realize that it is impossible for him to make a financial success of fruit work without incorporating into his work other lines of agriculture, as soil depletion, tree de-

terioration and lack of productivity are sure to follow in rapid succession. If a grower is to be extremely successful he must not expect to make the operating expenses, interest on investments, taxes, water charges, and at the same time yield the profits reasonably expected from the bearing orchards, from the sale alone, even at good prices, of from forty to sixty per cent of the crop represented by the extra fancy grade and the rather meager returns for the balance of the crop, he must make all of the operating expenses, taxes, water charges and even interest on the investment from the grades below the extra fancy and from side lines easily operated in conjunction with the orchard industry.

The most important factor in fruit production, after the reduction of the cull and C grades of fruit and the increasing of the extra fancy grade, is the selection of a side line or side lines that shall readily adapt itself to the conditions under which the orchardist shall operate. Just what this shall be must be largely governed by the likes and dislikes of the grower, the demand for the product and local conditions. Some growers will naturally turn to livestock, while others will take up the poultry work or even side lines in vegetable and small fruit production. Any of the lines will give profitable returns if in-

telligently handled and followed up in a systematic manner, but haphazard work in side lines is even more disastrous than with orchard work, as the results show so much quicker.

The proper combination of livestock and fruit growing is almost an ideal arrangement, as it gives constant employment and makes it possible to return to the soil as much or more in fertilizer annually as is removed by the fruit trees. An arrangement of this kind makes it possible for the orchardist to build up rather than deplete his soil. Sheep and goats are not at all adapted to orchard combinations, but dairy cattle, hogs and horses in limited numbers can be profitably worked into the scheme without endangering the orchard in the least. All of the work done in a small orchard, or for that matter any orchard, can be more economically done with good draft brood mares, providing they are raising colts each year, than any other stock. The colts, however, must be good ones. It is useless to raise anything but colts that will develop into heavy draft horses. It is much more practical to raise a mule colt from a light mare than to raise a small or unsatisfactory horse; however, heavy mules are worth more than light ones. I have in mind one orchardist who owns a young twenty-acre orchard who makes a practice of

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turning off a nice young team of horses each year. Practically all of his feed is produced between the tree rows in the orchard, and the only expense is the time consumed in actually feeding the colts. The fancy high grade draft horses of Europe are not produced in large bands, but by small holders who are able to produce only one or two each year.

The combination of dairy cattle and orcharding works out much better in detail than almost any other line of stock and fruit work, because of the orchardist's ability to produce the necessary feed among the trees. Alfalfa, corn, peas and oats and root crops are all readily produced in the orchard and can best be utilized as feed for dairy cattle. Particularly is this true if the

silo is used, for the corn at least. The good prices here obtainable for dairy products and the increasing demand for dairy stock generally makes this one of the most adaptable side lines for fruit growers. When the fertilizer and possible soil improvement factors are considered, there is probably no other side line more profitable. If registered individuals of any of the recognized dairy breeds are used, it simply makes the dairy end of the problem just that much more profitable.

The one chief drawback to the utilizing of the dairy cow as a side line in orchard work is the fact that it is so difficult to secure and retain competent milkers. With a large herd this is an important factor and must always be considered. This is one of the chief reasons why so many fruit men are naturally turning to the hog as the solution of the waste of the orchard. There are very few acres of bearing apple orchards under irrigation in the Pacific Northwest that cannot be made to produce, with the addition of a small amount of grain, five to ten or even more 175-pound to 200-pound hogs annually and in no way interfere with the best interests of the orchard beyond leaving the soil richer and having utilized to good advantage every cull or C grade apple or pear produced. An unmeasured factor is the reduction of codling moth by destroying at once every wormy fruit as it falls. A little forethought and careful planning will arrange the orchard area in such a way as to have a part in alfalfa for grazing and hay, a part for cutting and feeding green, and a small portion for corn, carrots, mangels, peas and oats, or, where the rows are far enough apart, for artichokes, so that all or nearly all of the feed may be produced upon the farm. In addition to producing pork, breeding stock, if systematically handled, may be satisfactorily produced; however, this becomes the work of a specialist, and is never wholly satisfactory unless done by one thoroughly familiar with all problems.

Poultry as a side line with fruit culture offers so many avenues for returns that almost every fruit grower sometime during his life has resolved to enter the field of poultry work. It is needless to say that this is true not

alone of fruit men, because the field has been invaded by every class of people, prepared and unprepared alike, and for this reason, if for no other, there have been more failures in poultry lines than in all other lines of agriculture together. Usually these failures are due in a large degree to the overlooking of certain principles of poultry management, and for this reason no orchardist should attempt poultry as a side line to fruit work without studying the underlying principles or at first starting in a small way and developing his plant as his knowledge increases.

The various avenues of the poultry industry lead one to consider the following kinds of fowls: Chickens, ducks, geese, turkeys, pigeons, guineas, etc.

10,000 Anjou Pear

and other varieties. Best quality

8,000 Gravenstein Apple

and other leading varieties

All budded, 3 years, whole roots

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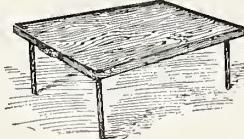
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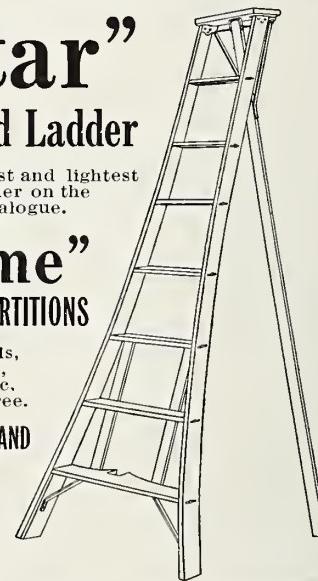
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While the opportunities of the industry open the way to the following factors: Poultry for meat, poultry for breeding, eggs for food, eggs for hatching, and day old chicks. More people are interested in chickens than all other fowls together, and if properly handled there is more money in chickens than in any other class of fowls, except for the specialist who makes sides lines of certain factors in the production of show birds, capons or other special lines.

Geese, pigeons and guineas all require such special care and peculiar environments that no one, unless specially fitted for their care, should undertake to produce them in quantities. The guinea is particularly partial to freedom, insects and wild haunts, so that even a clean cultivated orchard offers very few attractions for him, and yet after becoming accustomed to the surroundings they may become very productive. Some people find difficulty in marketing guinea fowls after producing them; however, this should not be a serious factor if a first-class cafe or restaurant that makes a specialty of wild fowls, game, etc., can be reached. Ninety per cent of the pheasants, partridges and other game of this kind served in some of our best cafes are guineas, pure and simple.

Eastern poultry raisers tell us that economical as well as profitable production of the turkey is wending its way toward the setting sun and that the Eastern turkey producer can no longer compete with the Western turkey producer of the irrigated sections. The semi-arid districts of the Northwest, with a limited amount of rainfall and an abundance of young grasshoppers, afford excellent opportunity for turkey raising. The Indian Runner duck, or Runner duck, as the American Association now desires to call it, is the latest addition to the barnyard fowl group, and if we are to believe one-half of what is written about it, it will soon largely take the place of the common chicken in meat as well as egg production. It surely is a wonder at rapid maturity, freedom from common troubles and in the fine quality of its meat.

Most persons overlook the factors of fertilizer in the orchard produced by a good sizes flock of fowls and the almost innumerable number of destructive insects destroyed each day by a good active fowl. The value of the fertilizer and the work done in destroying the insects will alone pay much towards the expenses of the care of the flock. If properly handled in colony houses, they can be transported from place to place in the orchard in a simple and easy manner. With from fifty to one hundred fowls per acre producing even only one-half as much net per bird as the average poultry man expects per fowl, a very neat net profit could be shown on a five or ten-acre orchard.

In addition to good colts, dairy cattle, hogs or poultry as side lines in the bearing orchard, there are unlimited opportunities in the young orchard with a score of vegetables, small fruits and even seed crops. One person will make money from an intercrop of

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Efficiency in an organization can come only from the actual efficiency of its members. And because the Stark Bros. organization is made up of men who know trees and everything that grows, we urge you to consider the importance of all this to yourself.

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Each member of this organization is a specialist. There's no guess-work here about even the smallest detail of planting, growing, digging, packing, inspecting or any other part of the work we do in this business nursery.

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dewberries, another on strawberries, a third with seed corn, a fourth with head lettuce and so on, while an innumerable number will fail at everything they try because of poor judgment and lack of prompt action.

Two New Apple Recipes

In October, 1912, "Better Fruit" published an edition called "Two Hundred and Nine Ways of Serving Apples as Dessert." The Oregon Agricultural College has added two new recipes, which we suggest some of our housewives try. The recipes are as follows:

Blushing Apples—Select eight red apples and cook in boiling water until soft, turning them often. Have water half surround apples. Remove skins carefully, so that the red color remains on the fruit, and arrange on serving dish. To the water add one cup of sugar, grated rind of one lemon and the juice of one orange; simmer until reduced to one cup. Cool and pour over apples. Serve with whipped cream.

Coddled Apples—Pare and core eight medium sized apples and cook in syrup made with three cups of water and one cup of sugar, turning frequently. Keep covered until completely cooked. Then

remove cover and reduce syrup until it becomes very thick, continuing to turn apples occasionally. When cool fill the centers of the cooked apples with jelly or stewed prunes (with stones removed) and cover tops with whipped cream.

The Watsonville Apple Annual

At the Fourth California Apple Show, held at Watsonville, the principal prizes given were for the best fifty-box lots. M. N. Lettunich & Co., Watsonville, won the prize for the best fifty boxes of Newtwns. J. A. Waters of Watsonville won second prize for Yellow Newtwns. M. L. Kalich & Co. of Watsonville won for the best fifty boxes of Bellflowers. L. P. Cox of Watsonville won second for fifty boxes of Bellflowers. B. Pista of Watsonville won first for best fifty boxes of Langford Seedlings. S. J. Duckworth won first for the best fifty boxes of White Winter Pearmain. The sweepstakes, the best fifty boxes of White Winter Pearmain, was won by J. Duckworth of Watsonville. The number of prizes won is very large. We regret that our space in this issue is not sufficient to permit us publishing the list complete, which would take about three pages.

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Double Wheel
Hoe, Culti-
vator, Plow
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The greatest cultivating tool in the world for the grower of garden crops from drilled seed. The plow opens furrows for manure, seed, etc., and can be reversed for covering. The cultivating teeth are adapted for deep or shallow work and for marking out. Crops can be worked both sides at once until 20 inches high.



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Combined
Hill and Drill Seeder,
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This is a practical every day time-, labor-, and money-saver for the woman in tending her vegetable garden as well as for the market-gardener. It combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel cultivator, and a rapid and efficient wheel garden plow. Sows all garden seeds in drills or in hills.



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The most efficient tool ever invented for cultivating vineyards, hop yards, and orchards of apple, citrus, olive and groves of orange, walnut, etc. It is equipped with fruit tree shield and side hitch for low trees. Carries teeth, sweeps, furrowers, plows, etc. Works deep or shallow and cuts from 4 to 6½ feet wide. Convertible into disc harrow and alfalfa cultivator.

Planet Jr 12-tooth
Harrow, Cultivator
and Pulverizer



An invaluable tool in the market-garden, truck and strawberry patches. Its 12 chisel-shaped teeth cut out all weeds, stir and mellow the soil and leave the ground in the finest condition without throwing dirt on plants. Can be set exactly to desired depth making delicate work easy.

Standardization of Berry Boxes

[From Report of Conference of Growers, Shippers and Box Makers, at Portland, Oregon]

AT Portland, Oregon, on October 22, 1913, a large meeting of fruit growers and shippers, box and veneer manufacturers successfully adopted standard berry boxes and crates to comply with the laws of many states and city ordinances now in effect in practically all of the large cities of the United States. In the past few years many states and cities have passed laws for the protection of consumers, requiring fruit packages to contain a certain standard volume of fruit. At the last legislative session in the State of Washington the United States standard dry quart and pint were made the standard measures for the sale of berries in that state. Like laws exist in thirteen other states of the Union, and since Northwest box makers and berry growers market their product throughout the country, the immediate standardization of containers was considered necessary.

This meeting was held under the auspices of the Northwestern Association of Box Manufacturers, at the instance of O. C. Fenlason of the Pacific Fruit Package Company, who represented berry box manufacturers in bringing this meeting about.

The meeting was held in the Fountain room of the Oregon Hotel and organized by electing Mr. J. B. Knapp, manager of the Northwestern Association of Box Manufacturers, as chair-

man, and Mr. G. W. Cheney, of the Columbia Box & Lumber Company, as secretary. After a formal statement of the objects of the meeting, Mr. Knapp presented a review of state laws and city ordinances relating to the subject at hand. He urged the necessity of adopting standard quart and pint berry boxes containing respectively 67.2 and 33.6 cubic inches. He pointed out the advantage of providing cups of uniform dimensions and crates to contain these cups. Upon motion by Mr. F. D. Nash, of the Hague Box & Lumber Company of Tacoma, Washington, the meeting went on record as endorsing the United States dry quart and pint as the standard of measure for all berry boxes manufactured and used in the Northwest.

The meeting proceeded to a consideration of the standard dimensions of berry boxes to hold the standard quart and pint of measure by a discussion of proposed dimensions from various fruit growers, hallock and crate manufacturers present. This discussion was led by Mr. O. C. Fenlason, who was mainly instrumental in organizing the meeting. Mr. Fenlason introduced as exhibits for consideration a number of berry hallocks and crates of various dimensions which had been made up to conform to the standards required. Representatives of various fruit grow-

ers' and shippers' associations pointed out the advantages and disadvantages of boxes varying in dimensions and after a thorough discussion of the subject the matter of recommending standards for adoption was referred to a committee composed of Mr. O. H. Schwerdtman, Oregon Box & Manufacturing Company; Mr. C. W. Hooker, Hood River Apple Growers' Association; Mr. O. C. Fenlason, Pacific Fruit Package Company; Mr. J. C. Barline, Washington Mill Company; Mr. I. N. Cable, Sebastopol Berry Growers, Inc.; Mr. A. W. Stone, Hood River Fruit Growers' Association, and Mr. F. D. Nash, Hague Box Company. The meeting then adjourned so that the committee might consider the standards proposed and hear the arguments of delegates pertaining to each of these standards.

During the afternoon session the committee reported its recommendations and these were submitted to the meeting for adoption. The committee's recommendations included a quart cup $5 \times 5 \times 2\frac{3}{16}$ inches deep, a shallow pint cup $5 \times 5 \times 1\frac{1}{32}$ inches deep, and a deep pint cup $4\frac{3}{8} \times 4\frac{1}{8} \times 1\frac{1}{8}$ inches deep. It also provided standard specifications for six crates of various kinds to contain sixteen quart cups and twenty-four pint cups of the new standard dimensions. Those present at the meeting were: E. C. Stone, Grays Harbor Commercial Company, Cosmopolis, Washington; I. N. Cable, Sebastopol Berry Growers, Inc., Sebastopol, California;

J. P. Aspinwall, Aspinwall Brothers, Brooks, Oregon; J. C. Barline, Washington Mill Company, Spokane, Washington; C. F. Keller, Columbia Box & Veneer Company, Puyallup, Washington; O. C. Fenlason, Pacific Fruit Package Company, Raymond, Washington; E. R. Fletcher, Weston Veneer & Basket Company, Raymond, Washington; A. J. Stokes, National Lumber & Box Company, Hoquiam, Washington; A. W. Stone, fruit grower, Hood River, Oregon; L. H. Marks, Coats & Marks Company, Kennewick, Washington; Frank D. Nash, Hague Box & Lumber Company, Tacoma, Washington; C. W. Hooker, Apple Growers' Union, Hood River, Oregon; W. H. Anderson, Bridal Veil Lumbering Company, Bridal Veil, Oregon; C. W. Whittlesey, Standard Box & Lumber Company, Portland, Oregon; G. W. Cheney, Columbia Box & Lumber Company, South Bend, Washington; Thomas Autzen, Portland Manufacturing Company, St. Johns, Oregon; C. A. Wood, Raymond, Washington; H. Bundy, Puget Veneer Company, Edmonds, Washington; O. H. Schwerdtman, Oregon Box & Manufacturing Company, Portland, Oregon; H. W. McPhail, Pacific Fruit Package Company, Raymond, Washington; H. B. Oakleaf, Forest Service, Portland, Oregon; A. B. Tenney, Multnomah Iron Works, Portland, Oregon; Charles Gilchrist, First National Bank, Centralia, Washington; D. E. Swinehart, Interstate Lumber Company, Missoula, Montana; F. A. Douty, Multnomah Lumber & Box Company, Portland, Oregon; J. S. Taylor, Multnomah Lumber & Box Company, Portland, Oregon; J. B. Knapp, Northwestern Association of Box Manufacturers, Portland, Oregon; A. Whisnant, The Timberman, Portland, Oregon.

The following report of the committee on standardization of berry boxes and crates was adopted by the convention:

Portland, Oregon, October 22, 1913.
To THE MEMBERS OF THIS CONVENTION:

Gentlemen: We beg to submit the following standard berry boxes and crates for adoption by this convention. The quart berry box is of a capacity to conform to the United States standard dry quart, which contains 67.2 cubic inches, and the two pint berry boxes conform to the United States standard dry pint, which contains 33.6 cubic inches. The pint crate specifications are drawn to accommodate 24 pint boxes and the quart crates are designed to contain 16 boxes.

STANDARD BERRY BOXES

U. S. Standard Quart Berry Box

Dimensions: $5 \times 5 \times 13\frac{1}{16}$ " deep, outside.
Band—Length $31\frac{1}{2}$ "; width (green) $3\frac{1}{16}$ "; thickness, 23 from 1 inch.

Band scored—2", 5", 5", $4\frac{1}{2}$ ".

Bottoms—Length $10\frac{1}{2}$ "; width (green) $4\frac{1}{8}$ "; thickness, 26 from 1 inch.

Bottom scored— $21\frac{1}{16}$ ", $4\frac{1}{8}$ ", $21\frac{1}{16}$ ".

U. S. Standard Shallow Pint

Dimensions: $5 \times 5 \times 11\frac{1}{2}$ " deep, outside.
Band—Length $21\frac{1}{2}$ "; width (green) $2\frac{1}{4}$ "; thickness, 23 from 1 inch.

Band scored—2", 5", 5", $4\frac{1}{2}$ ".

Bottom—Length $7\frac{1}{16}$ "; width (green) $4\frac{1}{8}$ "; thickness, 26 from 1 inch.

Bottom scored— $11\frac{1}{32}$ ", $4\frac{1}{8}$ ", $11\frac{1}{32}$ ".

U. S. Standard Deep Pint Berry Box

Dimensions: $4\frac{1}{8} \times 4\frac{1}{8} \times 1\frac{1}{8}$ " deep, outside.
Band—Length $19\frac{1}{2}$ "; width (green) $21\frac{1}{16}$ "; thickness, 23 from 1 inch.

Band scored—2", 4%", 4%", 4%", $4\frac{1}{2}$ ".

Bottom—Length 8"; width (green) $4\frac{1}{4}$ "; thickness, 26 from 1 inch.

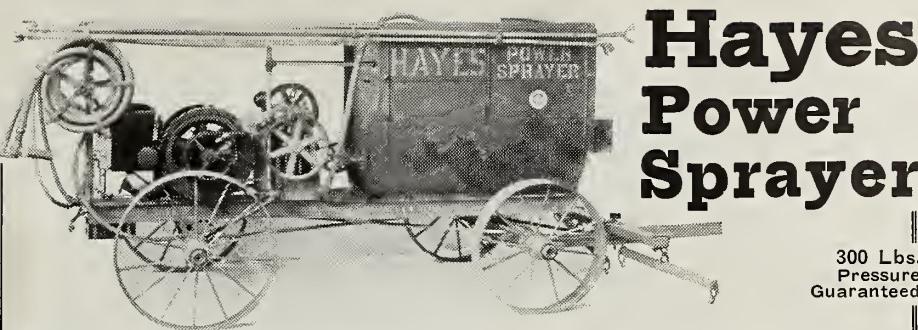
Bottom scored—1%", $4\frac{1}{4}$ ", 1%".

STANDARD BERRY BOX CRATES

16 Quart or 24 Shallow Pint Crate, Western U. S. Standard

2 ends— $10\frac{1}{16} \times 7\frac{1}{2} \times 7\frac{1}{16}$ ", S 1 S.

1 center— $10\frac{1}{16} \times 7\frac{1}{2} \times 7\frac{1}{16}$ ", rough.



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—but not as
quick
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2 bottom slats— $22 \times 3\frac{1}{2} \times 1\frac{1}{2}$ ".
2 pieces cover— $22 \times 5\frac{1}{4} \times 1\frac{1}{2}$ ".
- 16 Quart Deck Crate, Western U. S. Standard
2 ends— $10\frac{1}{16} \times 8\frac{1}{4} \times 1\frac{1}{2}$ ", S 2 S, dadoed.
1 center— $10\frac{1}{16} \times 8\frac{1}{4} \times 1\frac{1}{2}$ ", beveled, dadoed.
2 side slats— $23\frac{1}{2} \times 4 \times 1\frac{1}{2}$ ".
2 side slats— $23\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ ".
2 bottom slats— $23\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ ".
2 pieces cover— $23\frac{1}{2} \times 5\frac{1}{4} \times 1\frac{1}{2}$ ".
2 decks— $10\frac{1}{2} \times 9\frac{3}{4} \times 1\frac{1}{2}$ ".
- 24 Deep Pint Crate, Western U. S. Standard
2 ends— $13\frac{3}{4} \times 5\frac{3}{4} \times 7\frac{1}{16}$ ", S 1 S, hand holds.
1 center— $13\frac{3}{4} \times 5\frac{3}{4} \times 7\frac{1}{16}$ ", rough.
4 side slats— $19\frac{1}{4} \times 2\frac{3}{4} \times 1\frac{1}{2}$ ".
3 bottom slats— $19\frac{1}{4} \times 3\frac{1}{2} \times 1\frac{1}{2}$ ".
2 pieces cover— $19\frac{1}{4} \times 6\frac{3}{4} \times 1\frac{1}{2}$ ".
- 24 Deep Pint Deck Crate, Western U. S. Standard
2 ends— $13\frac{3}{4} \times 6\frac{1}{2} \times 1\frac{1}{2}$ ", S 2 S, dadoed.
1 center— $13\frac{3}{4} \times 6\frac{1}{2} \times 1\frac{1}{2}$ ", S 2 S, beveled, dadoed.
2 side slats— $20\frac{1}{2} \times 2\frac{3}{4} \times 1\frac{1}{2}$ ".
2 side slats— $20\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ ".
3 bottom slats— $20\frac{1}{2} \times 3\frac{3}{4} \times 1\frac{1}{2}$ ".
2 pieces cover— $20\frac{1}{2} \times 6\frac{3}{4} \times 1\frac{1}{2}$ ".
- Notes—Cleats:** No cleats will be furnished unless ordered by buyer. **Thickness:** Sides, top and bottom— $\frac{1}{2}$ " means 3 pieces from 1" lumber. **Hand Holds:** Ends will be hand held when so ordered by buyer.
- We recommend the adoption of the above specifications, since they provide cups which conform to state laws and city ordinances relating to the sale and marketing of berry boxes and berries and the crates provide suitable containers for them. Respectfully submitted, Standardization Committee.

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Capital, \$150,000.00, paid in

Incorporated 1904

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281 Washington Street, NEW YORK CITY

Pacific Coast Fruits and Vegetables

Our New York Store Centrally Located. One block from Erie R. R. Fruit Depot

Preparing Bees for Winter

October is the month to see that each hive is well tucked away for winter. Cellar wintering is not practiced in Colorado, and when our open winters are taken into consideration it is not to be wondered at. But bees need protection from the wind and extreme cold spells that come every winter. Go through each colony in October and see that each has at least forty pounds of honey to carry them through. Any that have twenty to twenty-five pounds will need feeding in the spring. Colonies having less than twenty pounds should be given combs and honey, a surplus of which should be kept on hand. Queenless colonies may be united with others by placing on top, with a paper or cloth between. The bees of both colonies should be well smoked.

Colonies affected with foul brood may be treated by shaking into an empty box for two days, screening in the bees so they cannot escape, then dumping them into a hive filled with combs of honey that are healthy. As late as October it is well to leave two or three combs in the center of the hive only partially filled with honey, so the bees can easily form a winter nest around the empty comb. Contract the entrances so that no mice can enter, and all holes around the edges of the hive or covers should be closed.

A willow hedge or other windbreak is a wonderful protection to an apiary. Probably the best method of giving bees protection in Colorado is to bunch four or six colonies together, placing them on stands at least four inches off the ground, packing straw around and over the hives, closing the lower entrances, but giving each colony an entrance at the top, so the bees may fly on warm winter days. A cover must be provided to hold the straw down and keep the straw dry.

If the apiary is in a sheltered location fair protection may be given by filling an empty super with leaves, having a cloth in the bottom to keep the leaves from sifting down among the combs. Any method that can be devised to keep the colonies warm, dry and protected from winds will insure good wintering of normal colonies with good quality of

winter stores.—Wesley Foster, Colorado Apiary Inspector.

Ideal Ration for Dairy Cow

It is not possible to give a ration that will suit all conditions and all kinds of cows. In general, however, it may be said that the first requisite of an ideal ration for a good dairy cow is to feed all the roughage (soiling crop, hay, silage, roots, etc.) she will eat up clean, and one pound of concentrates (bran, chop, all kinds of grain, soye bean meal, etc.) for each three to four pounds of milk she produces. In most cases it will be found that this will be just about all she will eat regularly without going off feed. The second requisite in an ideal ration is that it shoul be nutri-

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Money in Raising Fruit IN Washington and Oregon

Washington and Oregon fruit commands the highest market price. Rich soil varying in depth from ten to one hundred feet and a moderate climate with no extremes of heat or cold make fruit growing profitable.

There is no danger of overcrowding in this business. While the apple production of these states increases greatly each year, the market is constantly expanding. There are numerous opportunities awaiting the fruit grower along the new

Wenatchee-Oroville Line

of the Great Northern Railway, over 130 miles through the fertile fruit territory embraced in the Entiat Valley, the Lake Chelan Region, Methow Valley, Brewster Flats, Bridgeport Orchards, Okanogan Valley and surrounding plains country.

Write today for full information and copy of our Washington Bulletin to

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ST. PAUL, MINN.



tious. The ration should be sufficiently bulky on the one hand to fully distend the stomach and other digestive organs, and at the same time there should be enough digestible material to fully meet the requirements of the animal. Practical experience has shown that a proper balance is reached when about two-thirds of the total dry matter of the ration is in the form of roughage and one-third in the form of concentrates. In addition to this, an ideal ration should be palatable, so that an animal will eat it with a relish. While little is known concerning the effect of palatability, it is certainly true that of two feeds alike in all other respects, the one most readily eaten by the animal will be the more effective.

The secretion of milk seems to be intimately connected with the water content of the food. The cow needs a large amount of water to drink, but aside from this there is a demand for feeds containing a high percentage of water, such as green forage, silage, roots, etc. The cow's digestion is kept in much better tone when such feeds are used. To have an exact balance between the protein and the carbohydrates and fats is not so important as was once thought; for milk production it is necessary to have a larger amount of protein than for beef animals, but a dairy ration is now considered fairly satisfactory if the nutritive ratio falls anywhere between 1:4.4 and 1:6.5. Last of all, the ideal ration should be composed of such feeds as will furnish the largest amount of digestible nutrients at the lowest cost. This necessitates the liberal use of home-grown feeds, with proper selection of those which must be purchased.—A. B. B.

More Interesting Than A Novel

A graphic narrative, swift and dramatic and illuminating, the work of a scholar and an expert, a master of men who has helped make history. Such is

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By President Wilson

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will haul your fruit to market, displacing 16 horses and their teamsters. Requires but 20 gallons of fuel and one gallon of lubricating oil in ten hours. Hauls on any road—loose, soft, wet or hilly.

It will plow or cultivate your orchard without injuring the trees. Its height is but 58 in.

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Turns in its own length. Its large traction surface allows it to do its work in any soil, whether loosely cultivated or soft and wet. The weight, less than 5 tons, is distributed over such a large ground area that it will not pack the soil, causing moisture to escape. Ground pressure but seven pounds to the square inch.

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Northwest Apples At New York Flower Show

The New York Horticultural Society held its annual flower show in the Museum of Natural History in that city October 31 to November 4. This show is usually devoted exclusively to the exhibit of flowers; however, Steinhardt & Kelly of New York City were favored by the management and exhibited a magnificent display of apples. This display was from Yakima, Hood River, Wenatchee and Mosier, and commanded

an immense amount of attention. One of the large trade papers writes us in reference to this exhibit as follows: "There was one fruit display in the entire exhibition, that of Steinhardt & Kelly, who displayed Northwestern apples taken direct from the commercially packed boxes. This was not fruit that had been especially selected for the purpose, but was the run of commercial pack. There were two displays by this firm, in which every variety on the market commercially was shown by several large plates. Under the rules of the society fruit is never exhibited, and it was a great stroke of enterprise on the part of Steinhardt & Kelly, who are members of the Horticultural So-

Our Splendid Clubbing Offer

"Better Fruit" offers to its readers one of the finest lists of Clubbing Offers ever placed before the public.

These rates do not apply to Canada, owing to extra postage.

American Poultry	\$.50	Harper's Weekly	\$4.00	Harper's Monthly	\$4.00
McClure's Magazine	1.50	Gleanings in Bee Culture	1.00	Collier's Weekly	2.50
Pictorial Review	1.00	McClure's	1.50	"Better Fruit"	1.00
"Better Fruit"	1.00	"Better Fruit"	1.00	Total	\$7.50
Total	\$4.00	Total	\$7.50	All for	5.45
All for	3.10	All for	5.50		
Everybody's	\$1.50	Pacific Homestead	\$1.00	Home Needlework	\$.75
Scientific American	3.00	Review of Reviews	3.00	World's Work	3.00
"Better Fruit"	1.00	American	1.50	Garden Magazine	1.50
Total	\$5.50	"Better Fruit"	1.00	"Better Fruit"	1.00
All for	4.60	Total	\$6.50	Total	\$6.25
		All for	4.00	All for	4.00
Youth's Companion	\$2.00	Northwest Poultry Journal	\$.50	Ladies' World	\$1.00
Century	4.00	Good Housekeeping	1.50	Farm Journal (five years)	1.00
"Better Fruit"	1.00	Everybody's	1.50	Delineator	1.50
Total	\$7.00	"Better Fruit"	1.00	"Better Fruit"	1.00
All for	6.35	Total	\$4.50	Total	\$4.50
		All for	3.35	All for	3.00
Country Life in America	\$4.00	Oregon Agriculturist	\$1.00	Boston Cooking School	\$1.00
World's Work	3.00	Northwest Poultry Journal50	Outlook	3.00
"Better Fruit"	1.00	"Better Fruit"	1.00	"Better Fruit"	1.00
Total	\$8.00	Total	\$2.50	Total	\$5.00
All for	6.90	All for	1.85	All for	4.40
Good Poultry	\$.25	The Etude	\$1.50	Hoard's Dairymen	\$1.00
Fruit Grower and Farmer	1.00	Century	4.00	Woman's Home Companion	1.50
"Better Fruit"	1.00	"Better Fruit"	1.00	"Better Fruit"	1.00
Total	\$2.25	Total	\$6.50	Total	\$3.50
All for	1.65	All for	5.30	All for	2.90
Kimball's Dairy Farmer	\$1.00	Breeders' Gazette	\$1.75	Western Farmer	\$1.00
McCall's Magazine50	"Better Fruit"	1.00	Northwest Poultry Journal50
Woman's Home Companion	1.50	Total	\$2.75	American Bee Journal	1.00
"Better Fruit"	1.00	Both for	2.00	"Better Fruit"	1.00
Total	\$4.00			Total	\$3.50
All for	2.95			All for	2.35
American Bee Journal	\$1.00	Current Literature	\$3.00	Ladies' Home Journal	\$.150
Good Housekeeping	1.50	Scribner's	3.00	Country Gentleman	1.50
"Better Fruit"	1.00	"Better Fruit"	1.00	Saturday Evening Post	1.50
Total	\$3.50	Total	\$7.00	"Better Fruit"	1.00
All for	2.50	All for	5.90	Total	\$5.50
				All for	4.50

Through lack of space we are unable to give a more detailed Clubbing List. Rates on all magazines will be given to any of our subscribers by writing "Better Fruit."

ciety, to get permission to show Northwestern apples.

"Of course no advertising could be given out, as at these exhibitions none is permitted. One of our representatives stood nearby the apple exhibit for two hours and noted how every visitor stopped in front of the Northwestern apples for at least a minute or two. This exhibition was really the center attraction of the show. The advertising will be worth at least several thousand dollars, since those who attend the exhibition are those who have plenty of leisure and are that class which are the greatest consumers of high grade fruit. Mr. Steinhardt could not have found any place in the country nor taken advantage of any occasion where he could have reached more prominent men and women of wealth and leisure than in this flower

show. These people buy Northwestern fruit, and it reached them by the thousands while they had leisure to inspect and to be impressed with the beauty of

the fruit. Unless we are very much mistaken it will create among these people a much larger demand than has existed before."

North Pacific Fruit Distributors

[Spokane Spokesman-Review]

No words can better illustrate the comprehensive character of the work being done by the North Pacific Fruit Distributors than a summary of the fruit organizations which are being identified with the co-operative association. Nor can a better endorsement of the North Pacific Fruit Distributors be given than the fact that the oyster men of Boston, the citrus growers of the Isle of Pines, the apple growers of Iowa and British Columbia are organizing in the same way, and under the

advise of the officers of the North Pacific organization. The following is a list of subcentrals and locals under the subcentrals:

Apple Growers' Association, Hood River, Oregon—Locals:
Hood River Apple Growers' Union, Hood River, Oregon.
Davidson Fruit Company, Hood River.
National Apple Company, Hood River.
Salem Fruit Union, Salem, Oregon.
Hood River Apple & Storage Company, Hood River, Oregon.
White Salmon Valley Fruit Growers' Union, White Salmon, Washington.

Apple Growers' Union of White Salmon Valley, Underwood, Washington.
 Umpqua Valley Fruit Growers' Union, Roseburg, Oregon.
 Benton County Growers' Association, Corvallis, Oregon.
 Wenatchee-North Central Fruit Distributors, Wenatchee, Washington—Locals:
 Wenatchee, Wenatchee, Washington.
 Dryden, Dryden, Washington.
 Peshastin, Peshastin, Washington.
 Chelan, Chelan, Washington.
 Cashmere, Cashmere, Washington.
 Other locals are in process of organization or affiliation.

Walla Walla District Fruit Distributors, Walla Walla, Washington—Locals:
 Milton Fruit Growers' Union, Freewater, Oregon.
 Walla Walla Valley Fruit Growers' Association, Freewater, Oregon.
 Touchet Valley Growers' Union, Dayton, Washington.
 Hermiston Fruit Growers, Hermiston, Oregon.
 Fruit Growers' Mutual Association, La Grande, Oregon.
 Imbler Fruit Growers' Union, Imbler, Oregon.
 Farmers' Union Exchange, Union, Oregon.
 Idaho-Oregon Fruit Growers' Association, Payette, Idaho—Locals:
 Payette District Fruit Growers' Association, Payette, Idaho.
 Woodspur District Fruit Growers' Association, Woodspur, Idaho.
 Fruitland District Fruit Growers' Association, Fruitland, Idaho.
 (The above three associations formerly constituted the Payette Fruit Packing Company, Payette, Idaho.)
 New Plymouth District Fruit Growers' Association, New Plymouth, Idaho.
 Emmett Fruit Growers' Association (formerly Emmett Fruit and Produce Association), Emmett, Idaho.
 Parma-Roswell District Fruit Growers' Association (formerly Parma-Roswell Fruit Growers' Union), Parma, Idaho.
 Caldwell District Fruit Growers' Association (formerly Caldwell Fruit and Produce Growers' Association and the Canyon Commission Company), Caldwell, Idaho.
 Nampa District Fruit Growers' Association (formerly Nampa Fruit Growers' Association), Nampa, Idaho.
 Boise District Fruit Growers' Association (formerly Boise Valley Fruit Growers' Association), Boise, Idaho.
 Council District Fruit Growers' Association, Council, Idaho.
 Twin Falls District Fruit Growers' Association (formerly Twin Falls Produce Association), Twin Falls, Idaho.
 Buhl District Fruit Growers' Association (formerly Buhl Fruit and Produce Growers' Association), Buhl, Idaho.
 Santa Rosa Orchard Company.
 Brogan District Fruit Growers' Association, Brogan, Oregon.
 Yakima Valley Fruit Growers' Association, North Yakima, Washington—Locals:
 Lower Naches, North Yakima, Washington.
 Selah, Selah, Washington.
 Fruitvale, North Yakima, Washington.
 North Nob Hill, North Yakima.
 South Nob Hill, North Yakima.
 Donald, Wapato, Washington.
 Parker, Wapato, Washington.
 Granger, Granger, Washington.
 Sunnyside, Sunnyside, Washington.
 Ahtanum, North Yakima, Washington.
 Fairview, North Yakima, Washington.
 Hanford, Hanford, Washington.
 Moxee, North Yakima, Washington.
 Buena, Zillah, Washington.
 Kittitas Valley, Ellensburg, Washington.
 Wapato, Wapato, Washington.
 Cowichee, Cowichee, Washington.
 Richland, Richland, Washington.
 Emerald, Mabton, Washington.
 Grandview, Grandview, Washington.
 Prosser, Prosser, Washington.
 Kennewick, Kennewick, Washington,
 Broadway, North Yakima, Washington.
 Zillah, Zillah, Washington.
 White Bluffs, White Bluffs, Washington.
 Central Idaho-Washington Fruit Growers' Association, Garfield, Washington—Locals:
 Garfield Fruit Growers' Union, Garfield, Washington.
 Pullman Fruit Growers' Union, Pullman, Washington.
 Latah County Fruit Growers' Union, Moscow, Idaho.
 Farmington Fruit Growers' Association, Farmington, Washington.
 Colfax Fruit Growers' Union, Colfax, Washington.

KNOWLEDGE

Every Orchardist Should Have

On account of different climatic and soil conditions, there are no general directions that an orchardist can follow that will insure success in the control of insect trouble and fungous diseases.

Special Directions are Absolutely Necessary

When those directions may be obtained from an expert—without cost—is it wise to experiment?

We desire to be of *real* service to the Western orchardist, and with that idea in mind we established a FREE SERVICE BUREAU in San Francisco. Mr. S. W. FOSTER, former Entomologist, United States Department of Agriculture, is in charge of this bureau. For many years Mr. Foster has made a special study of orchard problems under Western conditions and can give the individual advice that is absolutely reliable. Write to him today. Ask for the information you desire, and you will get it—at once.

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Special mixtures for specific insect and fungous troubles. Arsenate of Lead, standard, paste and powder, for killing codling moth and chewing insects. Arsenate of Lead, Tri-Plumbic, paste, specially designed for use in humid, foggy sections of the West. Arsenite of Zinc, powder, for killing chewing insects on truck crops. Lime-Sulphur Solution, for use on fruit trees during dormant period. Atomic Sulphur, fungicide, for use on peach trees to control brown rot; on apple trees to control mildew, leaf-spots, cedar-rust and scab—also for red spiders and mites. Bordeaux Mixture, paste, fungicide, for general use on plants; for celery blight, peach blight, etc. Soluble Oil and Oil Emulsion, for dormant treatment of fruit trees and for pear thrips, aphids, etc.

Spray peach and apple trees NOW to prevent blight and gummosis next spring. Orchard Brand Bordeaux Mixture, paste, is made from pure chemicals in concentrated form—ready for diluting in spray tank.

General Chemical Company of California

ROYAL INSURANCE BUILDING

SAN FRANCISCO, CALIFORNIA

Montana Fruit Distributors, Hamilton, Montana—Locals:

Stevensville, Stevensville, Montana.
 Clarks Fork Valley Fruit Growers' Association, Fromberg, Montana.
 Flathead Fruit Growers' Exchange, Kalispell, Montana.

Victor, Victor, Montana.
 Woodside, Woodside, Montana.

Como, Como, Montana.
 Missoula Fruit and Produce Association, Missoula, Montana.

Spokane Fruit Growers' Company, Spokane, Washington—Locals:

Meadow Lake, Four Lakes, Washington.

Otis Orchards, Otis Orchards, Washington.

Sunset, Spokane, Washington.

Rockford, Rockford, Washington.

Grand Junction, Post Falls, Idaho.

Cœur d'Alene, Cœur d'Alene, Idaho.

Myers Falls, Myers Falls, Washington.

Hunters, Hunters, Washington.

Deer Park, Deer Park, Washington.

Valleyford, Valleyford, Washington.

Greenacres, Greenacres, Washington.

Opportunity, Opportunity, Washington.

Five Mile Prairie, Spokane, Washington.

Sharon, Sharon, Washington.

Kettle Falls, Kettle Falls, Washington.

Pleasant Orchard Prairie, Hillyard, Washington.

Colville, Colville, Washington.

Moran Prairie, Spokane, Washington.

Kiesling, Kiesling, Washington.

Green Bluff, Mead, Washington.

Southeastern Idaho Producers' Association—Locals:

Richfield, Idaho.

Dietrich, Idaho.

Shoshone, Idaho.

Gooding, Idaho.

Wendle, Idaho.

Jerome, Idaho.

Rupert, Idaho.

Burley, Idaho.

Twin Falls, Idaho.

Blackfoot, Idaho.

Aberdeen, Idaho.

(Seven more in process of organization.)

The Milton, Oregon, strawberry crop amounted to eighteen carloads.

The Yellow Newtown

The Northwestern Fruit Exchange reports, among different shipments, the shipment and sale of Newtows to Chicago, Louisiana, Texas and Nashville, Tennessee. The Yellow Newtown is one of the most popular apples in England of any and nearly the entire output of the Northwest has always been shipped to English markets, with the exception of a moderate quantity that went to New York City. California is a large consumer of Newtows. Two or three years ago the Hood River Association succeeded in placing Newtows in Maine. The Newtown is one of the best eating apples in the world, and is also splendid for cooking. It is grown extensively in the Pacific Northwest, where it grows to perfection. All marketing associations should endeavor to get this variety started at all consuming points.

Work of Rural Schools

"Work of Rural Schools," edited by J. D. Eggleston and Robert W. Bruer, is an excellent treatise on the subject of rural schools and one which should be read by all fruit growers whose children are attending rural schools.

The Western New York Horticultural Society will hold their fifty-ninth annual meeting in Rochester, New York, January 28 to 30, 1914. The program will be unusually instructive. Many of the ablest men connected with fruit growing will address this meeting.

A TICKET

TO THE

Pacific Northwest

Means a Trip in the Right Direction

A vast area of fertile country along the line of the O-W. R. & N. awaits the touch of energetic men to convert it into fields, orchards and homes, like others here enjoy. Why not you? Write for "Pointers for Practical Farmers"—sent free upon application to

PASSENGER DEPARTMENT, O-W. R. & N.
704 Wells Fargo Building, Portland, Oregon



one considers the number of cans used throughout the country which have been shipped great distances, one realizes the enormous saving a little intelligent home canning might bring about. Home canning, however, should not seriously affect the business of commercial canning factories. There will always be plenty of people who have neither the time nor inclination to can their own products. More home canning, on the contrary, will accustom people more and more to using canned products in general.

Some practical experiments have been made in the laboratory of the Bureau of Plant Industry's Office of Farm Management from which every home where canning is possible might profit. This laboratory is not what is known as a "modern, well-equipped laboratory." In fact, it does not look like a laboratory at all. It contains simply what every average home may have, and is nothing more nor less than an everyday kitchen. Here recipes that are applicable for every home have been thoroughly tested, and are gladly furnished to any housewife upon application. Several kinds of simple canning outfits, available for every home, are described in the Department of Agriculture's Farmers' Bulletin No. 521. This also contains valuable suggestions on tomato canning, which are applicable to other canned goods, and includes definitions of canning terms which should be valuable to housewives not familiar with some of the more technical terms.

Wenatchee, Washington, according to late advices, will probably ship in the neighborhood of 2,500 cars of apples this season.

MANAGER—

Fitted by training and long experience to handle any orchard or farming project. Executive ability. Thoroughly understands dry farming and irrigation. Experience of such nature that it covers wide range of subjects incident to managing large commercial propositions. References will satisfy the most exacting. Address Box E, care Better Fruit.

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Families Can Have Better Health by Canning

THE balanced ration of many Americans today is made up something as follows: Bread, butter, eggs, meat and fish, potatoes, patent medicine laxatives. Many Americans customarily suffer from one of the following complaints: Indigestion, constipation, rheumatism. A simple change of the daily menu might go a long way to remedy these ailments, according to the Bureau of Plant Industry's specialist in charge of Canning Club Work. This specialist recommends a change to a menu more in keeping with nature's plan, something as follows: Bread, butter, fruit, meat, fish, eggs, vegetables, greens. He recommends that every family provide a diet of fruit and vegetables for every day in the year. This would do much to eliminate the need for patent medicine laxatives, that figure so prominently in many Americans' bill of fare. If every home kept on hand enough canned products so that there might be a can of fruits, a can of greens and a can of vegetables for every day during the winter there would be little need for the laxatives now so regularly purchased from the corner drug store. There would also be great economy in the substitution of an inexpensive food for the more expensive ones.

More home canning, done at the proper season, would enable the average family always to have the proper quantity of canned products, and would save an astonishing amount of food that

goes to waste every year. It is estimated that over 50 per cent of all the vegetables, greens, fruit and berries that grow in this country go to waste and are actually lost to those who need them. This is simply because housewives have not learned to care for these surplus products efficiently and to make them available for the winter months by canning.

That home canning may reduce the cost of living is not generally appreciated. Even those who are accustomed to use a supply of canned goods in the winter do not realize that they sometimes pay transportation on goods from distant parts of the country, when there is a surplus of the same product in their own vicinity during the summer months which might have been saved by home canning. For example, a can of tomatoes is bought during the winter in certain districts in Colorado for fifteen cents. Tomatoes are taken as an example, as this is one of the canned products that appears most frequently on the shelves of groceries throughout Colorado. This can was put up in Maryland. The people of the section where it was purchased live in an irrigated district, where there is always a surplus of tomatoes in summer, yet they pay transportation on vegetables from Maryland, when they might have put up a similar can during the season in their own district which would have cost about five cents. When

Here and There in the Fruit World

Nineteen states are now required by law to teach agriculture in the common schools. Normal schools are introducing a course in agriculture, and agricultural colleges are offering special lines of work in order to meet the demand for teachers. Free reading courses are also offered by some colleges, among which may be mentioned the University of Arizona, the Michigan Agricultural College, Cornell University, the University of New Hampshire and the State University at Columbus, Ohio.

The Horticultural Union of North Yakima, according to Mr. E. E. Sampson, manager, made the average on peaches for the different varieties vary all the way from 38 cents to 48 cents. Apricots averaged 73 cents per crate, while crabapples showed averages as follows: Transcendent \$1.25, Siberian \$1.01 and Hyslop \$1.00.

Zillah, Washington, is becoming recognized as a prominent factor in the grape industry, where they grow to perfection. The grape industry is increasing in this section and also throughout the Yakima Valley. This year the crop amounted to 70,000 baskets, each basket containing eight pounds, and returning to the growers \$13,650.

The Fruit Jobbers' Association will hold their tenth annual meeting at Kansas City, Missouri, February 4, 5 and 6, 1914. The editor had the honor of addressing the meeting held in 1911 at Sacramento, California, and knows that this meeting will be a grand success and result in much good for everyone connected with the fruit industry.

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Department 12

The State Horticultural Society of Vermont held its nineteenth annual meeting at Randolph November 19 to 21. The program was especially interesting and very instructive. Vermont became famous as an apple growing section on account of the splendid quality they produce in the Northern Spy.

The thirty-ninth annual convention of the American Association of Nurserymen will be held at Cleveland, Ohio, June 24 to 26, 1914. The thirty-eighth annual convention was held in Portland, Oregon, the first time this association ever met on the Pacific Coast. The meeting was a grand success.

The Boston Daily Post did a good publicity work for the apple industry by giving away one hundred big red apples to the first hundred readers who correctly stated in order of number the leading candidates for governor at the election November 4.

The Chas. H. Lilly Company of Seattle, Washington, have just issued an attractive catalog on poultry, which will be valuable to fruit growers, particularly those who want to engage in a little diversity outside of the growing of fruit.

Stark Bros., Louisiana, Missouri, have issued a booklet entitled "The Stark Orchard and Spray Book," which contains much valuable information. The liberality of Stark Bros. is shown in their offer to send this book free of charge to any fruit grower.

White Salmon, Washington, marketed 18,791 crates of strawberries during the past season, paying the growers \$47,325.14. White Salmon produces very early berries, which averaged the grower \$2.53 per crate.

The Northern Pacific Railway made a fine exhibit at the International Dry Farming Congress at Tulsa, Oklahoma, consisting of processed fruits, grain exhibits and other products of the Northwest.

Boat shipments for export from New York during the first week in November of barreled apples on two steamers amounted to 50,000 barrels, or 150,000 boxes, which would be 250 carloads.

Mr. George H. Appel, of New Orleans, observed Apple Day by giving away ten barrels of apples. He has recently moved into his new store, where he expects to do a much larger business.

Farmers in the corn belt of the Mississippi Valley have met with some serious losses by turning their cattle to pasture among the standing corn stalks after the corn had been harvested.

The National League of Commission Merchants will hold their twenty-second annual meeting at Jacksonville, Florida, January 14 to 16, 1914.

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J. F. Perry won the Great Northern cup for his wonderful exhibit of grapes at the carnival held at Kennewick in September. Kennewick is famous for producing magnificent grapes.

Walla Walla, Washington, reports the shipments of apples will be about 125 cars, compared with 320 cars last year.

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UNION MEAT COMPANY

Department 37

North Portland, Oregon

BETTER FRUIT

The First Annual Fair, Hesperides, held at Wenatchee in October, was certainly a great success, as evidenced by the attendance totaling in five days over 15,000 people.

Professor R. M. Winslow, provincial horticulturist for British Columbia, intends to make a large display of British Columbia fruit at the Chicago Land Show.

The California Apple Show, held at Watsonville October 6 to 11, was especially attractive on account of feature exhibits.

Milton and Freewater crop will total ninety-eight cars, about one-half of what was shipped last year.

The North Pacific Fruit Distributors up to November 10 had shipped approximately 3,000 cars.

Summer Apples

According to the United States Department of Agriculture, considerable attention has been given the production of summer apples. Summer apples of the right varieties and early fall apples for several years have commanded good prices. Most apple growers have become specialists, and the tendency has been toward the production of winter apples. It seems wise that the growers give the production of summer and fall apples some attention, because the demand is good for the right varieties of a shipping quality, at remunerative prices. The Eastman apple is a new apple which is now being cultivated in the Upper Mississippi Valley quite extensively.

The diversity in fruit growing is shown by the spring orders for 1913 in the State of Washington. Eastern Washington is going into the berry business quite extensively and the planting of plums and prunes was very large. Chelan, Okanogan and Grant Counties purchased large quantities of apricot trees. Yakima and Spokane Counties were large purchasers of strawberries. Whatcom and Skagit Counties were large purchasers of raspberries and blackberries.

Mr. Charles J. Sinsel, head of the fruit shipping department of the Oregon Short Line Railroad, visited the Northwest Fruit Exchange in Portland and stated that the crop of Italian prunes in Southern Idaho this year amounted to 900 cars, Elberta peaches 100 cars, while the estimate for the crop of apples was 2,250 cars. He also stated that prunes sold regularly at 55 to 70 cents a crate, f.o.b., and reported apples moving regularly at prices varying from \$1.00 to \$1.80.

Editor Better Fruit:

Each number of "Better Fruit" is a text book and is an encyclopedia of accurate information. It is easily the foremost fruit publication on the American continent and only a man with the highest order of news instinct could get out such a journal month after month. Very truly yours, A. R. Kanaga, San Francisco, California.

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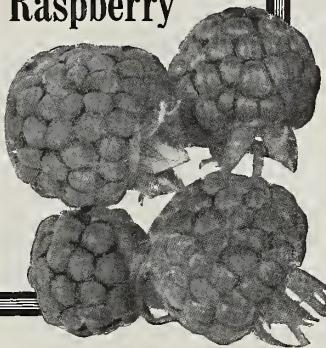
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Hogs, Chickens, Loganberries with Fruit Raising

By S. H. Brown, Gervais, Oregon

THE problem that confronts the fruit grower today is, "Suppose I have a failure of crop, or perhaps the crop of fruit such as I have will be a large one everywhere, and as a result the price is low, how will I go along another year without going behind?" The answer for such is, diversify. But before going into anything there are a few things that should be taken into serious consideration, such as, Will I like to do the thing I have in mind, provided of course I can make it pay? Is it going to pay after I get into it? Is there any other line that I could take up along with these other things that would work well with them and still be to my liking and profitable? Unless people are sure they will like the business they intend to begin they had better stay out of it, no matter if it does have the earmarks of being a profitable venture, for they are bound to neglect, perhaps in a small way at first, and more so after the new is worn off, until through indifference and neglect it will prove to be a losing game, simply through the lack of interest that may be taken in it.

Loganberries have been and are now a paying business, and if the market still holds up on them in the future as in the past they would be a good line to handle along with fruit growing, as they are ripe and gone quite a while before fruit of most kinds is ready to be harvested. It is not practicable to grow loganberries in localities where the temperature is zero or below in the winter, as zero weather will kill the canes if they are not covered up, and I have found by experience that it is not practicable to leave the vines on the ground during the winter and train them up after the danger of frost is over. The canes are very easily

cracked, but if trained in the fall will heal over if the pith is not broken, and the cane is saved. If not trained until spring, however, the cracked ones will die and be lost, which is far greater than anyone not having had the actual experience would imagine. It is far more expensive to train them in the spring than in the fall, immediately after the picking is over.

There seems to be a great difference of opinion regarding the overproduc-

tion of this particular berry, but this is all based on opinions only, and is a question that time alone will answer. The hardest thing that the loganberry growers have had to contend with was to get a good crop of berries and at the same time get a good growth of canes for the following year. I believe I have solved this problem, or partially so at least, with intensive but shallow cultivation close to the vines, fertilizing (I fertilize by sowing vetch in the early fall and plowing it under the next spring), spraying them thoroughly, and removing and burning the old canes as soon as possible after the harvest is over. I would as soon leave my old tree prunings in my orchard as to leave the old canes in the vineyard. The argument of those who favor plowing under the old canes is that they make a good fertilizer. I differ with them on that point, as I am firmly convinced that they keep the ground entirely too loose, thereby allowing the moisture to escape, and do far more harm than good, aside from the fact that they are bound to infect the new canes with anything that may be on them. The disc harrow is another thing that should be kept out of the loganberry vineyard, unless used with the greatest care, for they will go too deep next the hills, cut the side roots and rob the plant of a lot of its nourishment. By following these rules I harvested a little over five tons per acre from my yard this year, and at the same time have a growth of canes that is far more promising than the ones that bore this year's crop.

As I have already stated, the loganberry is a paying crop, but like most everything else has been overestimated as to its revenue producing qualities. This recalls to my mind a man I know that has a small yard, and I have heard

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him stand up and tell people that his yard makes him four hundred dollars per acre per year, while the fact is, as I happen to know, that the years he gets a good crop, and also a good price, his yard brings him about that amount gross. He does not count out his picking, training, cultivating, etc., at all, and the queerest part of it is the number of people that believe such rot as that. Taking as a basis a four ton per acre average crop, year in and year out, which I think it not far off, it costs me about two cents per pound to grow the loganberry, harvest it and place it on board the cars; this, of course, counts in a reasonable rental for the land, taxes, interest, and depreciation of horses, machinery, etc., and your own time, as well as reasonable wages for your employees, but does not include the cost of crates if shipping to the open market. The cost of planting a loganberry vineyard and bringing it up to the bearing stage, while of course differing under different conditions, is around one hundred dollars per acre, exclusive of the cost of the land.

Along with these things, or in localities where it is not practicable to grow loganberries, a few good brood sows of some good breed, properly handled, will most certainly show a balance on the proper side of the cash book, and would no doubt make a good side line to take up in connection with the orchard business. Cheap feed of different kinds can be grown on a few acres for raising the pigs after they have been weaned, up to the fattening point, then they could be finished up for market or sold as feeders, which sell here for about the same price per pound as the fat hogs. I do not believe that pigs can be raised on high priced feed (grain, etc.) and be made to return a profit. They should be cared for well until they get a good start, or well along after they are weaned, then they will do well on clover, rape, alfalfa, or in fact almost any kind of plants of that nature that can be grown successfully in the different localities. The white artichoke is an excellent winter feed for hogs—let the hogs dig them—if one has sandy land to grow them in; otherwise the land will bake and be nothing but a clod heap from its being tramped on and worked over by the hogs rooting while it is wet. A very small patch of these would be sufficient, as nothing but breeding stock should be wintered.

Sows should be bred so they will litter in the early spring, and by the time the pigs are old enough to shift for themselves the spring pasture will be in its prime to receive them. They could start on clover, which would run them until about July 1, and by that time the rape would be ready; from the rape patch they could go to corn or peas, where they will nearly finish ready for the market. This plan works excellently for me, as it saves the expense of harvesting the crops, and the stock always thrives by such handling. It is poor economy to have the sows bring two litters per year, for one litter would have to be wintered, and they

will not bring much of a profit after coming through the winter. Care should be taken not to overstock, nor to have too many hogs for the feed. This seems to be the most common failing of the hog raiser.

The hen plays an important part with the farmer, as it not only supplies the table, but also helps to keep the grocery bills down, and in a great many cases keeps the merchant constantly in debt to the farmer. While I have never had experience with poultry raising on a large scale, I do know that in a small way they can be managed so they will return a fair profit, and at the same time require only a small amount of time each day.

Poultry and Other Side Lines

By N. C. Jorgensen, Salem, Oregon

WHAT can be done in the line of diversity for fruit growers depends on the nature of the land, location and market. Where I am located, in the Willamette Valley north of Salem, near Chemawa, the Indian training school, the land is equally good for apples, pears, cherries, prunes and small fruits. As information to those not acquainted with fruit growing, I will state that on land as we find it here a good income can be secured right from the beginning by growing small fruits amongst the fruit trees. My land was all a forest. Gradually, as I got it cleared, I planted it to fruit trees, and the same spring would plant it to strawberries, corn, potatoes, growing as full and heavy a crop as if there were no trees, the trees only taking the place of one hill of corn or strawberries. Strawberries would last five years. After that I would have potatoes and corn for three years more, and by that time the trees would be in full bearing. The land was kept up by sowing cover crops of leguminous plants. I have had success with crimson clover, but consider vetch the best for that purpose. I have also sowed rape as a cover crop where I intended to make potash available. In prune and cherry orchards I have cover crops at intervals, but apple orchards must be treated different. From what I have observed I have come to the conclusion that the land here, as nature has handed it down to us, is as near perfect for apples as it can be made. I doubt if any professor can improve on it. If commercial potash, or potash made available by certain cover crops, will improve the apples I don't know, but beware of nitrogen. If there is too much of this it will interfere with the coloring of the apples. Neither do we want much cultivation after the trees are grown and in full bearing. Our soil as it is, without doctoring, will produce apples as beautiful as can be grown anywhere else. I have also had raspberries in the young orchard, and both trees and berries have done very well.

After the trees get so large that nothing can be profitably grown amongst them, chickens can be turned in. Many poultry men make a success of the business by using the land exclusively for chickens, and it then should certainly

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be a paying enterprise to use an orchard for range, and it is a fact that nothing can equal an orchard as range for chickens. The chickens can there have sunshine and shade to suit, and comfort means a great deal to a chicken. The cultivation the orchard receives will insure the soil against contamination. We have here on our place of thirty acres a plant for 1,000 hens. Incubator house, brooder house and breeding houses with yards are conveniently located near the house. Through the middle of the orchard is a row of colony houses for 1,000 hens. Our place would afford range for 4,000 hens without crowding. What can be done in that line depends on the man. Eggs are gathered every evening, cleaned and stamped with the name of our place and my name, and we cannot near supply the demand. Our eggs are only a drop in the bucket in the Portland market, where they go. I know that many customers go a long way to get our eggs, and the dealer is wishing for ten times as many eggs. I only write this to show that it is a business which is far from overdone. But do not start in the poultry business thinking that it is something so simple and easy; that you can have everything regulated so that there is but little to do but gather eggs, as you will be disappointed. Learn all you can before you start, and if you are willing to work early and late and faithfully look after every detail and keep right on though you meet with adversities, success will be yours. I will further state that though we have pure bred fowls and try our best to improve the flock from year to year, we are not in the "fancy" breeding game. Our income is from marketed eggs, and we buy all the feed.

If anyone contemplates the planting of an apple orchard with the intention of ultimately using it as a chicken range I will advise to plant light colored fruit, as the chickens will constantly increase the fertility of the soil and perhaps interfere with the coloring of the apples. The droppings you gather in the colony houses are of considerable value. If anything on the place is lacking in thrift you can soon get some growth on it by applying the droppings as a fertilizer. I have two acres of open land which I keep in a high state of fertility and manage to grow three crops in two years, one of vetch and wheat for soil ing, one of oats for hay and one of kale. If conveniently located, market gardening can successfully be carried on, with the great amount of fertilizer available on the place. Chickens and a raspberry patch also go very well together. I have a patch of red raspberries (Cuthbert) which apparently will live forever. The bushes, eight years old, are as thrifty and yield as well as when young. Another thing which I think can be carried on successfully with fruit and poultry is hog raising. While there is always some waste fruit, yet in a well cared for orchard there is not much for hogs, but the great amount of fertilizer from chickens and hogs will enable one to grow a great amount of succulent feed. Reserve a few acres for that purpose;

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Write for this beautifully illustrated book—full of information for fruit growers, farmers and gardeners. Lists and describes Allen's hardy, prolific, correctly grown berry plants—Strawberries, Raspberries, Blackberries, Grapes, Currants, etc.—all the best, new and standard varieties and guaranteed true-to-name. Write today for free copy
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No apple in years has at-
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Prof. W. S. Thornber says:

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Besides your regular order of
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THIS YEAR

The Vineland Nursery Co.
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AGENTS WANTED

plan so as to make it yield all it can of succulent feed of different kinds; have a lot for young pigs to run in, so they can grow up and be robust and strong, then study feeds and feeding, so you know what you are doing, and with the present prices on hogs hog raising will be a profitable undertaking. What I have stated is suited to our soil and climate. Everybody must determine for themselves what their place is best adapted for. It is true that diversity will give the fruit grower a surer and more uniform income, give broader knowledge and make life more interesting and increase happiness.

Diversified Farming

By R. B. Miller, Traffic Manager
O.-W. R. & N. Co., Portland, Oregon

THE importance of diversified farming is now receiving attention from men who, until of late, have been specializing in fruits. When the value of raising something else on the land, of maintaining a dairy herd, growing swine and poultry farming is recognized by men whose profits from their orchard crops have been large, it is a long stride in the right direction and an encouraging step in advance in farm pursuits. We repeat here a saying hitherto emphasized, viz., that diversified farming is the keynote to success in agriculture. We want the term agriculture used in its generic sense. In its all-embracing application let us consider something of what may be done on the land. No word of greater encouragement comes to us than the information that the orchardists of Hood River Valley have decided to go in for dairy herds and the growing of swine. They are engaging in new industries with the same intelligence they devoted to the perfection of their fruit products. They are entering on a larger sphere of farm work. They are destined to succeed. Failure does not come where proper methods are pursued.

The editor of "Better Fruit" has asked me for an article on diversified farming. He chose a subject in which the Oregon-Washington Railroad and Navigation Company has been deeply interested for years. It has been sending out demonstration trains, agriculturists and stock experts and has been issuing literature containing information regarding various pursuits on the land. Today we come to you with a story telling of results—of how men have prospered through following instructions given by our agriculturists and set forth in our publications. Last December we operated a "Dairy and Hog Special" in a part of the territory tributary to our lines. A recent follow-up trip over the route of this train showed most gratifying results. There are hundreds of dairy cattle where there were few, if any, less than a year ago, and the swine industry has grown until more than fifty per cent of the pork used in the Northwest is produced at home. There are no off years in the income of the orchardist who has, in addition to his fruit trees, a herd of dairy cattle, a drove of swine and a

TREES

THERE'S BIG MONEY IN TREES

—provided you plant the right varieties and get stock that is strong and thrifty and true to name. It don't pay to take chances with anything but absolutely first-class stock—from a reliable nursery.

We have been established here for 30 years and are thoroughly posted on what is best adapted from a profit-producing standpoint, to every section of the Pacific Coast.

WE GROW EVERYTHING THAT GROWS

and can supply your orders complete—large or small quantities—oranges, lemons, pomelos, apples, peaches, pears, plums, walnuts, almonds, grape-vines, berries, ornamental shrubs, palms, evergreens hardy field grown roses, etc., etc.

WRITE US FOR SUGGESTIONS

Let us know your probable requirements and what you are planning on setting out this season. We will be glad to advise with you, free of charge, as to what is best suited to your locality.



Hood River Nurseries

Have for the coming season a
very complete line of

Nursery Stock

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

Send for prices

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13,000 acres of apple orchards, Mt.
Hood, Mt. Adams and the Columbia
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40 inches long Price \$1.00

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Hood River, Oregon

BETTER FRUIT

flock of poultry. There is no crop shortage when returns from the creamery, the abattoir and the commission man are counted. The income is not restricted to any particular period. The revenue is continuous, and the industries also provide for the constant employment of labor. This provides help when it is needed, without delay incident to procuring assistance when multitudes are clamoring for help in their orchards, and where promptness in garnering the harvest may mean much. Fruits ripen at certain periods. With other industries the harvest season is continuous, and the receipts unfailing.

We advocate no especial variety of dairy cow, recognizing the value of all the milch-producing strains. We do, however, ask that care be taken in selection, feeding, shelter, testing and breeding. Before making any investment in cows the dairyman should thoroughly and intelligently consider the line of dairying to be followed, and the breed that is best adapted to his purpose. Regarding swine, we make no recommendation as to breeds. They all look alike to the packer, provided they are in proper condition and of correct shape. But we do advise keeping hogs. We advise raising them for the market as one of the surest means of making money in which any land owner can engage, provided he proceeds intelligently. Care and cleanliness are just as essential to success in the pig sty as in the dairy. We have for distribution booklets having especial reference to the dairy cow and the hog. Needed information as to how to buy, feed and care for the animals is given. There are also government and state publications on these subjects, and as they are free, the individual who does not know how to care for dairy cattle or swine should fully inform himself before trying to raise an animal. Our agriculturists and stock men will also advise along any particular line in connection with dairying or hog raising.

Most orchardists are familiar with vegetable growing, or will learn how to prepare the ground, sow the seed and cultivate, while the orchard is coming into bearing. There are so many profitable crops that it is difficult to specify any particular kind. The nearness to some city market, or to some resort, will aid the grower in determining what to produce. The suggestion is offered, however, that corn be planted, and that it be either fed in the ear or used as silage. With the use of a hurdle fence the hogs will do their own husking. Where alfalfa can be grown, its planting is recommended. Corn and alfalfa make the balanced ration necessary for the dairy cow and for fattening beef cattle and hogs. Get acclimated seed corn. There will be large quantities available next spring. Thousands of acres were grown this year, and the crop is another link in the chain of prosperity which is being welded in the Pacific Northwest by the men who are engaged in soil pursuits and who are also engaged in diversified farming.

KEEP BEES Bees PAY in the increased yield of your orchard.
GET MORE FRUIT
AND Write for full particulars to

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THIS BOOK FREE

It Tells You How to
CARE AND FEED YOUR CROPS

We have just issued a book every page of which contains valuable practical information for the farmer. It is written by P. L. McCreary, who was for five years chemist in the fertilizer department at the California Experiment Station and for three years previous to that engaged in soil and water work for the United States Reclamation Service.

Send for this book today. We will send it to you without any obligation on your part.

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Write for Booklet.
Read Endorsements.
Ballygreen Nurseries, Hanford, Wash.
Salesmen Wanted.

Humane Treatment Gets Returns from Auto Tires

By F. A. Henderson, of Goodyear Tire and Rubber Company, Akron, Ohio

[As the percentage of fruit growers owning automobiles is larger than any other class of farmers, we believe this article on the care of tires will prove very valuable for the readers of "Better Fruit."—EDITOR.]

AN automobile is pretty nearly human in one respect. It requires care to make life long, and care that it may perform its functions up to the standard of its creation. Any tire is subject to more or less abuse owing to the fact that it must encounter all kinds of roads and receive little or no consideration from the driver. Cuts, stone bruises, mud blisters, etc., result, and if these are neglected they eventually

spell out the destruction of the tire, as dissipation does the man. Tire neglect runs bills up unbelievably. There are many more things for the drivers to consider than the mere driving of the car. Road conditions play an important part in the life of tires. Inflation, distribution of the weight of the machine and alignment of the wheels also exert an influence. No two tires in a set may give the same service, although their quality, workmanship and construction may be identical. One may give out far before its time. There is a reason for this. Do not blame the tire; always look at the real cause and place the blame where it belongs.

Possibly three-fourths of the tires returned to the manufacturers for repairs have been ridden insufficiently inflated. Insufficient inflation is responsible to a greater extent than perhaps anything else for blow-outs and quick disintegration. When a tire is imperfectly inflated the walls are continually bending back and forth as the car moves, with the same result as when a wire or piece of metal is bent back and forth in the hands. Heat is engendered in the threads and because of this heat, and the continued bending, the walls soon weaken and give away. In a short time they are not strong enough to support the air pressure multiplied by the weight of the car and blow-outs result. Don't inflate your tires by guess. A big, thick-walled tire will show little depression under a heavy load, even though the air pressure is too low for safety. One cannot tell from appearances whether or not the tires are perfectly inflated. A good gauge should be used and tires tested every day.

A little cut in a tire, like a little habit, if allowed to grow, soon gets beyond control and eventually destroys the tire. A close watch should be kept of these little cuts. They should be cleansed from sand and dirt with gasoline and then filled with cement and quick-repair gum. This gum will set in a few hours and become an integral part of the tire and prevent future trouble. A very large cut, after thus being treated, should be vulcanized at the earliest possible moment. To ignore these casing cuts altogether is to invite sand blisters and mud boils, which are caused by sand and dust entering the cut and working in between the tread and the fabric of the casing. Tires that have already developed all these diseases—mud boils and sand blisters—should be sent to the repair man at once. When these blisters are cleansed out and vulcanized down your tire is practically as good as new.

If an axle is even slightly out of true the tire will be subjected to a grinding action, which will wear out the tread in an incredibly short length of time. If you go over a heavy bump or have an accident of any kind have your



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says:**

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**Northwest Door
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Portland, Oregon



Vrooman Franquette Walnuts

Bear Nuts Young

Have you been led to believe that all Walnut trees fail to bear nuts until quite old? If so, you've been misinformed. Vrooman Franquette trees which we sold four years ago are bearing four pounds of nuts this year. Frequently they will bear a few nuts at even two and three years old. The Vrooman Franquette is naturally an early bearer; is a hardy variety—blooms sufficiently late, to escape late spring frost—is self fertile and produces large, full, clear meated, thin shelled, unusually delicious nuts. It is the best Walnut you can possibly buy. Plant that land of yours to Vrooman Franquettes this year and triple its value in a few short years. Let us tell you more about this excellent nut.

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Virginia Orchards 

are celebrated for growing the finest fruit in America. Apples often net \$250 to \$500 an acre. Peaches, Pears, Plums, Grapes and Strawberries thrive equally well. The equable climate, ample rainfall—average 4 inches monthly in 1913, fertile soil and nearness to large markets make conditions ideal for fruit-growing and Farming. You can secure choice land in the famous Shenandoah Valley Apple Belt at

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For Fall and Winter Spraying

The Old Reliable

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Why risk your crop by using new and untried preparations? Let your Experiment Station do the experimenting.

Why not use an ARSENATE OF LEAD that has successfully weathered the varied climatic conditions of Washington, Oregon, Idaho and Montana the past four years?

The Grasselli Brand Has Done This

IF IN DOUBT

Ask your local or state authorities. They are best qualified to advise as to local conditions.

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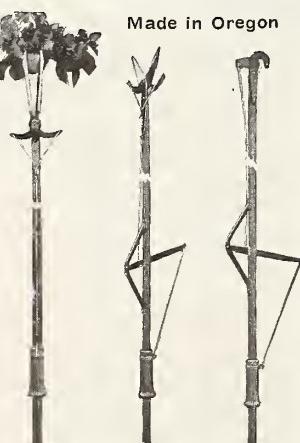
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wheels examined at once. Don't wait until the tread of your tire is worn off and then blame the tiremaker. If one tire stops the load, as is often the case when brakes are not properly adjusted, the tread is liable to be worn through to the fabric by one application of the brake. The strain of stopping the car is thrown almost entirely on one wheel. It is set and the tire is subjected to a severe grinding action with the pavement or road. See that the brakes are adjusted to equally distribute the strain. Sudden stops have the same effect and should be avoided. Skidding around corners at high speed is likewise very disastrous.

Tire fabric is like other textiles. It tears easily once it is cut, while it resists the most severe strains when uninjured. A very small cut or rend in the fabric may, therefore, result in a bad blow-out if not properly repaired. Pneumatic automobile tires are designed to carry loads in proportion to their cross sections and diameters. Nothing will tear tires to pieces so quickly as overloading. Many motorists who get frequent punctures and blow-outs, and who have tire troubles in general, can trace their difficulties to overloading. Tops, windshields and many other devices are considered as extras by the manufacturer and may increase the catalogue weight materially. It is estimated that five per cent added to the weight of the car adds fifteen per cent to the wear and tear on the tires. For this reason it is always economy to adopt tires one or two sizes larger than the regular equipment on your car. Even if the regular size tires are not overloaded additional mileage and satisfaction to cover the additional cost will be given by larger tires. The tremendous horsepower of some high-priced machines produces an effect similar to overloading. The strain is too great for rubber and fabric to endure long uninjured.

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Indications point to a banner year for Western boxed apples, due to the light crop in the East. We will want a larger supply than ever before. Write us fully what you will have, quantity, quality, varieties and your ideas of price. Use the wires when loading or when you wish quick information.

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Points to remember when consigning apples to the London Market

1.—We Specialize in Apples

2.—All Consignments Receive Our Personal Attention

3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

J. H. Hale's Own Story

ONCE tell a girl that you love her and make her believe it, and she just naturally wants you to tell it over and over again at every opportunity. Now when The William P. Stark Nurseries want me to rewrite the story of the J. H. Hale peach in a new way, fresh and up-to-date, I think the girl's way and the old, old story ever new is the best after all, for the essential facts of this most wonderful of all peaches were fully told last year and are worth repeating and rereading by every grower in the land who is looking for the best.

And so now it is only for me to tell briefly how the peach behaved in 1913. It was warm and wet during December and January, which caused the fruit buds to be badly swollen, and there seemed little chance for a crop, especially when in March, a month before blooming time, the buds were swollen nearly as big as peas, just ready to burst into bloom. Freezing nights, cold and warm days and very unsatisfactory conditions generally, conspired to kill off partially, and in some instances all hope of a crop on over seventy acres

of our orchards, mostly of Waddell, Carman, Hiley, Champion and Stevens peaches, while Belle of Georgia, Alberta and J. H. Hale came out best of all.

We had more than a full set on our pet peach and started off for a glorious crop, with an abundance of rain in spring and very favorable weather conditions. Early in June we thinned off 500 to 800 peaches per tree, then as the fruit began to develop we found a second thinning necessary, so that over most of the orchard fully 1,000 peaches per tree had to be taken off, so heavily loaded were they, even after the most damaging blooming season New England has had in many years.

Following abundant spring rains we had a very hot, dry summer, little or no rain from the last of May until the first week of September. So hot and dry was it that from the middle of August until near the end of the month the foliage hung limp and the fruit withered so as to have a rubbery feeling to the touch, the orchard apparently an utter wreck, no hope, no promise—a

dead failure for this season's crop and possibly death to the trees themselves.

Then just as all was apparently lost there came a little sprinkle of rain one night, saturating the limp foliage and withered peaches, but wetting down the dusty earth hardly an inch. This little sprinkle acted as a stay of execution, until two days later came another and more abundant shower, followed three days later by a real rain (the first in over three months) of the much needed life-giving water, so essential to plant life.

Then came the transformation. First the withered leaves began to straighten out, then in a day or two the shriveled,

NON-RESIDENT OWNERS AND PROSPECTIVE OWNERS

Will investigate and make reports on orchards and farms for your interests. Have been connected with large realty operators for years and am intimately acquainted with many large subdivision propositions. References furnished. Write for further particulars, rates and estimates. H. D. EISMANN, Grants Pass, Oregon.

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Wholesale—Retail

Offer a general line of nursery stock propagated from the best bearing trees in Hood River. Seventeen years in the business enables us to grow, dig and pack trees in a scientific manner.

We guarantee satisfaction.

Commercial orchards a specialty.
Write for direct-to-planter prices.

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Gearless Improved Standard
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Drills through any formation.
Five years ahead of any other.
Has record of drilling 130 feet
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Another record where 70 feet was drilled on 2½ gal. distillate
at 9¢ per gal. One man can operate. Electrically equipped for
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A Galvanizing of Great Durability, Originally Developed and to be Found Only in the American Steel & Wire Co.'s Fences

THE American Steel & Wire Company is the first to develop a THOROUGHLY GALVANIZED WIRE.

It has a thicker coat, a quality more refined, and a deeply adhesive contact of the zinc and the steel that solidly unites the two metals, highly flexible without injury, and having a finish and weather resistance unequalled—a thoroughly galvanized wire.

There are wonderful records of super-extraordinary efficiency, such as an auto tire lasting 30,000 miles; a pair of shoes, suit of clothes or a wagon showing astonishing durability; two ships built exactly alike, one being vastly better; or a certain piece of woven wire fencing apparently indestructible under long years of severe trial.

Years ago, in making and galvanizing

steel wire, we searched out the reason for this spasmodic super-excellence, and found it to be the chance combination of a high state of perfection, in the finest detail, of man, methods, machinery and materials. We then mastered these fickle elements of chance by the employment of a tremendous manufacturing organization and brought them under control for steady and continuous production.

We now announce the final completion of our facilities for the extensive and permanent production of this thoroughly galvanized wire. We shall use it in the manufacture of our celebrated woven wire fences—the AMERICAN FENCE, the ELLWOOD FENCE, the ROYAL FENCE, the ANTHONY FENCE, and all our other fences.

These fences are adapted for all field, farm and poultry uses, and possess superior structural advantages in quality of steel and fabric. Dealers everywhere throughout the country display these fences and will quote lowest prices.

They cost no more than other fences, and considering the extra large and heavy wires used, and the exclusive use of new thorough galvanizing, makes them especially attractive as the best and cheapest fences.

FRANK BAACKES, Vice Pres. and Gen'l Sales Agent
AMERICAN STEEL & WIRE COMPANY
CHICAGO NEW YORK CLEVELAND PITTSBURGH DENVER
U. S. STEEL PRODUCTS CO.
San Francisco Los Angeles Portland Seattle
THE AMERICAN STEEL FENCE POST is cheaper than wood and more durable. Send for booklet of uses. 3594

pucker-up little peaches took on solidity and started out on a new growth, and I, standing on the "Big rock" overlooking the orchard, noting the great transformation going on hour by hour, was filled with wonder and gratitude at God's power in giving us the rain that had wrought this miracle. In less than ten days the little shrunken peaches had puffed out into great golden and red beauties, 2½ to 4 inches in diameter, and while only a few have reached the enormous size of former years, the whole crop has been a great success as to size, beauty and quality.

Our first abundant picking for market was five days ahead of Elberta in the same orchard, while on a few trees, left unpicked for comparison, Elbertas have nearly all dropped to the ground, while the J. H. Hale are all on the trees—six or eight bushels per tree and not a dozen dropped peaches, proving over again that it never rushes you in the picking; pick it this week or leave it until next if you like.

Hundreds of visitors have seen it, side by side with Elberta, and if a stenographer had been at hand to take down the expressions of wonder at this peach greater than all others, William P. Stark could have filled a whole catalogue with words of commendation. Here are a few that I picked up:

"This puts the Elberta out of business for me."

"The Elberta is doomed."

"I am going home and pull up my Elberta orchard, for no one can compete with this."

"Too big to pack well."

"Largest and most beautiful peach I ever saw."

"No one will ever plant an Elberta after seeing and tasting this."

I Am Now Booking Orders for Logan-berry Tips for Spring Delivery

These tips are grown from vines that were thoroughly sprayed before tipping. Why plant tips from unsprayed vines when they cost you as much as those from sprayed ones? For prices, etc., address

SAM H. BROWN, Gervais, Oregon

Proprietor The Brown Vineyards

Yakima Valley Orchard

20 acres; 10 acres in best varieties winter apples, just beginning to bear; 10 acres in alfalfa; small house, barn, large cement cistern. Bearing orchards on all sides. Title and water right perfect. Price \$300 per acre; \$2,000 cash. Address V. L. GEORGESON, Prosser, Wash.

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Describing Fruit and Ornamental Trees, Shrubs, Vines, Roses, Berry Plants, etc.
Free on request. Write now, mentioning this paper.

J. B. PILKINGTON, NURSERYMAN, PORTLAND, OREGON

RELIABLE TREES For British Columbia

We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

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Victoria, British Columbia

Hood River Apple Vinegar Company

Hood River Yellow Newtown
Vinegar and Sweet Cider
made from
Choice Hood River Apples

If your jobber cannot supply you
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Hood River Grown Nursery Stock for Season 1913-1914

Standard Varieties
Prices Right and Stock First Class

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Projects 14 candle power light 150 feet. Burns Acetylene Gas. Weight 6 oz. Height 3½ in. Can be carried in hand or worn on cap or belt, leaving both hands free. No oil, soot or glass. Absolutely safe and simple. Fifty hours bright light costs 25¢. Useful as well during Automobile repairing. Catalogue free and instructive booklet, "Knots and How to Tie Them" mailed on request.

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Clean Rooms—Excellent Meals—One block from depot

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European Receivers of American Fruits

Eldest and First-Class House in this Branch

Cable Address: W. Vandiem A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

"A wonderful peach; shall recommend our company to plant 2,000 acres."

"Bigger and better than Elberta in every way, and my, what a firm one!"

"Good-bye Elberta for me, for this is good to eat."

"I don't care what the trees cost, they would be cheaper at \$1.00 each than Elberta for nothing."

"Never saw so many peaches on trees in my life, all big ones, too."

"Your Elbertas are a little better than most, but this puts them off the map."

"No use for any of us to grow other peaches; we can't meet up with this thing in market and come out alive."

"Thought I had seen peaches before, but this one beats them all."

"William P. Stark's book did not tell half the truth about it; so much better than I expected."

"Don't care what they ask for trees, it's me for a big orchard of them at once; I just can't wait."

"More profit in this peach if you pay \$5.00 per tree to get started than to get Elbertas for nothing."

All in all, 1913 has tested out another side of the J. H. Hale peach, and I can say stronger than ever before that there is no yellow peach now publicly known that possesses such points of merit as this. Compared with Elberta the tree is equally vigorous, hardy and productive, ripens five days ahead of that variety, yet can be made to hang on five to eight days longer if market conditions should make it desirable to do so. Fruit very much larger, higher colored, firmer and finer texture, will keep three times as long after being picked and will sell for 25 to 50 per cent more than Elbertas every time.

From one measured acre of 133 trees we picked on September 14, 748 bushels or an average of 5½ bushels or 8 crates per tree, 95 per cent of this fruit being high class marketable fruit selling f.o.b. at the farm at \$2.00 to \$2.50 per bushel, while \$1.25 was top price at this time for Elberta. All in all, I can freely and fully say at end of season for 1913 that the J. H. Hale peach has developed fully 50 per cent greater commercial value than the famous Elberta of the past, for it's surely "Good-bye to Elberta" just as fast as orchard men once see the J. H. Hale in fruiting. Any who doubt this better inquire of:

Prof. W. A. Henry, Madison, Wis.

John A. Wilson, Appleton, N. Y.

A. T. Henry, Wallingford, Conn.

F. M. Soper, Magnolia, Del., president State Horticultural Society.

D. E. Gould, vice president North Pacific Irrigation Co., Kennewick, Wash.

John H. Baird, Fort Valley, Ga.

A. D. Shamel, U. S. Department Agriculture, Washington, D. C.

G. C. Seavy, editor N. E. Homestead. And hundreds of others who have been to see them fruiting side by side with Elberta, in a large way, not a few pet trees, but a whole great orchard. These people know that "Elberta is doomed." (Signed) J. H. Hale.

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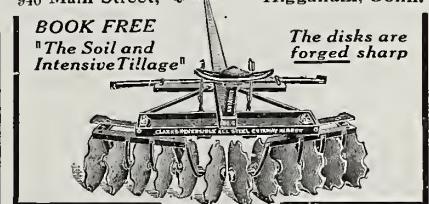
Ask us about the DOUBLE ACTION ENGINE HARROW, the DOUBLE ACTION—REGULAR, the DOUBLE ACTION—EXTENSION HEAD—(for orchard work), the SINGLE ACTION—REGULAR, the SINGLE ACTION—EXTENSION HEAD—(for orchard work), the BUSH AND BOG PLOW, the CORN AND COTTON HARROW, the RIGHT LAP PLOW, the CALIFORNIA ORCHARD PLOW, or the one-horse harrows and cultivators, whichever it may be that you need. Ask your dealer to show you a CUTAWAY (CLARK) machine. Do not accept a substitute. Write us for catalog.

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fruits and not concentrate on one variety." You have it sized up just about right, Brother Shepard, as you always do, and I believe right now our faces are toward the morning of a brighter day for the fruitgrower. We are young yet, but we are learning fast, and have energy to do a thing right when we know how.

Where are the pear countries of the world? Just two, the western shore of Europe—Holland, Belgium, France and the British Isles, and the western shore of America, where the climate corresponds to that of Holland, and that is Washington and Oregon. The eastern shore of Asia and the eastern shore of America cannot raise pears. The climate of each has something in common and the plant life the same. That is why we can grow the delicious French and Dutch pears here. This is true of thousands of other plants. Many plants from China, Corea and Japan will luxuriate on the Atlantic Coast, where they happen to be hardy, but do not thrive on the Pacific Coast. On the other hand, plants from Western Continental Europe and England are perfectly at home here. The best

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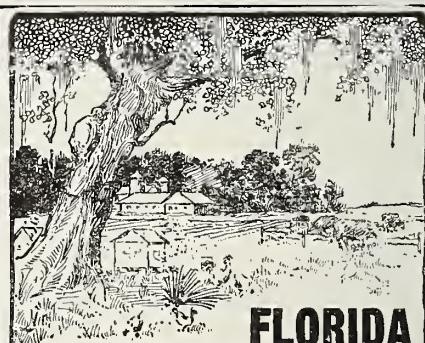
Shall We Plant Pears?

By Stephen J. Harmeling, Vashon, Washington

IF Washington and Oregon should get the pear mania I can predict, as a physician in this line of sickness, that the infection is not liable to spread beyond the Cascades eastward, or Mount Shasta southward. Fire blight and generally uncongenial climatic conditions will limit the perfect pear country to Puget Sound, the Willamette Valley and westward to the Coast.

In 1909 Professor H. E. Van Dieman was with us. He has traveled much and is without doubt the first pomologist of the land. When he saw the quality and the great variety of the pears we raised he lifted up his hands in amazement and, like a prophet, cried: "Men, why don't you plant pears? You have a veritable pear heaven here." Yes, it is true. Many of

us knew, or had some intimation that promised good results, but somehow we were switched off—sidetracked by such intense apple enthusiasts as Mason and a host of others who could just prophesy you crazy. I have preached pears for the past ten years. There are others who saw the opportunity. Our friend, E. H. Shepard, is far-sighted and thorough. He saw it. But, like many of us, was swept right into the apple current by the apple orators. "There is good money in pears and a good demand for them. It is going to be a big industry in the Northwest and will add much to the wealth and prosperity of the country. It is too bad some of us fool farmers did not have a little more sense a few years ago to plant more varieties of



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FLORIDA EAST COAST RY.

J. E. INGRAM, V.-Pres., or LOUIS LARSON, Northwestern Room J-3 City Bldg., St. Augustine, Fla. Agent, Room 103, 109 West Adams Street, Chicago, Ill.

d'Anjous shipped to New York came from Orcas Island, Washington, and were shipped by Mr. Myers—and Hood River came second—so the vouchers show which Mr. Myers has. They were all select beauties and brought very close to five dollars per box. Pears picked at the proper time can be shipped to the ends of the earth and are about as easy to handle as apples. The supply can never exceed the demand, for the area where they can be successfully grown is too limited. The grower will be able, under proper management, to dictate a price for his product that will be highly remunerative.

What varieties of pears should we plant? This is still problematical, and especially so because a given variety may do exceptionally well in one locality and not so well in another. The d'Anjou seems to do quite well all over this section, but it must be helped by interpollination of other varieties and by bees. Professor Lewis and his staff at Corvallis, Oregon, have made this matter a study. The Agricultural College authorities are doing the same at Pullman, Washington. It is to be sincerely hoped that these specialists shall not lack the means to investigate and experiment in these lines. These men are intensely in earnest. They are the greatest benefactors of the states and their services are of inestimable value. Here is where we must be liberal in our appropriations. They should have under test every variety of pear worth trying, and the facilities for doing it, and when the state has good men it should hold them and not let some other state take them away by a little paltry increase of salary. Pay these men and women what they are worth. They are producers of vast wealth to the state. The principal demand for the d'Anjou in this country comes from the French colony in New York City. It is prized highly in France and also in England. But, from all I can gather regarding the demand, it would seem that any good winter pear of, say, "very good" quality (as rated in pomology) is always in good demand in the Eastern markets. The markets have not settled down to a demand for any special variety.

Another good winter pear is the Comice. It is more upright in growth than the d'Anjou, the latter, with the right pruning, may have the apple tree

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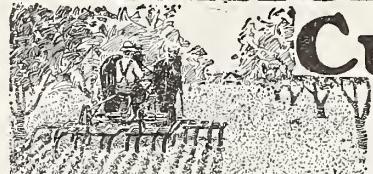
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Does more work with less draft and leaves a better surface mulch than any other cultivator made.

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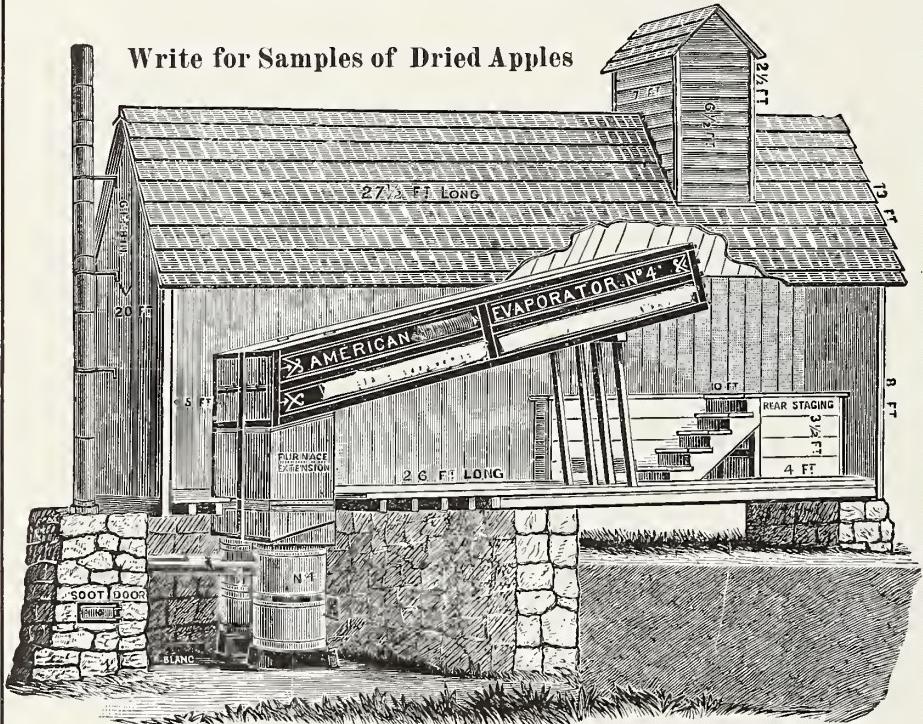
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- For Young Men—Circular No. 2—The Four Sex Lies
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 - For Girls—Circular No. 4—A Practical Talk with Girls About Their Health
 - For Young Women—Circular No. 10—Physical Development, Marriage and Motherhood
 - For Parents—Circular No. 1—The Need for Education in Sexual Hygiene
Circular No. 3—When and How to Tell the Children
Circular No. 5—A List of Books for Use in the Family on Sex
- Send 2-cent stamp with your address to Department D

The Oregon State Board of Health, 720 Selling Bldg., Portland, Oregon

form. We think the Comice of better quality than the d'Anjou, and it will on this account always sell in local and in outside markets. Its time of maturity is like the d'Anjou—early winter.

The Buerre Bosc is a fall pear. Some have named it as one of the coming commercial pears. It is a good, long-necked yellow pear, covered with russet, of very good quality. I would not yet dare to advise extensive planting of it except where it is known to do exceptionally well. It should be top-worked on Kieffer, with the latter on French roots for standards, and double-worked on Portuguese or Angiers quince for dwarfs.

A comparatively new pear from which we expect much and which we are planting extensively in our own orchards is the President Drouard. It is large, of good quality, golden and keeps well into January. It bears early and annually and is very prolific and the strongest grower we have. Grows well direct on the quince and when top-worked on Kieffer will bear in two or three years.

Another pear which is attracting much attention is the Duchess de Bourdeaux. It is of medium size, long stemmed, grows up like a Lombardy poplar and must be controlled with the knife. It keeps well into February in any old woodshed or cellar and always sells well here in the Seattle market. In quality I would call it good. It is very sweet, but has no aroma. It is not an early bearer, except on the quince, and must be double worked.

A word about the Bartlett. I have been reliably informed that the Eastern dealers in canned pears have told our cannery people that they would take all the canned Bartletts Puget Sound could produce, and use those grown under irrigation only as fillers, because their customers had already learned to prefer our Bartletts as having a better flavor. This is what we might naturally expect because they have a little more acid in them, making them a little more sprightly. If this supposition is cor-

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January 5 to 30, 1914

The College has spared no effort to make this the most complete short course in its history. A very wide range of courses will be offered in General Agriculture, Horticulture, Animal Husbandry, Dairying, Poultry Keeping, Mechanic Arts, Domestic Science and Art, Commerce, Forestry and Music. Numerous lectures and discussions on FARMERS' CO-OPERATION, at home and abroad, will be a leading feature. Make this a pleasant and profitable winter outing. No tuition. Accommodations reasonable. Reduced rates on all railroads.

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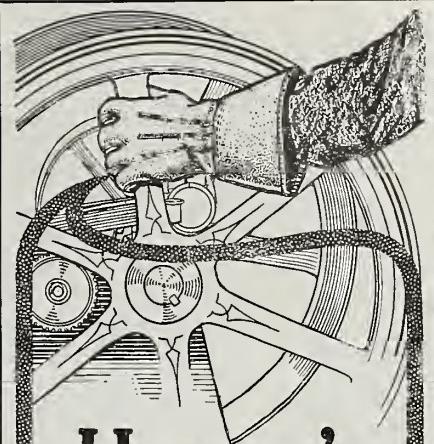
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rect, and the report true, then here we have a field so vast and rich as to amaze us. Our Bartletts bear annually to breaking down the trees. We can raise tons of them to the acre. Say 200 trees to the acre and 500 pounds to the tree, at two cents per pound, \$2,000. Where is that apple man? How about it, Mason? But cut it in half and say five boxes to a tree instead of ten. It is still good enough, is it not? Is this not worth looking into closely? In a word, we can raise the finer dessert winter pears and may take our pick of 100 varieties, or all of them, and they are wanted at home and abroad.

How shall we raise them? Here is the parting of the ways. I have a dear friend, Mr. Gay, who is naturally prejudiced against anything small, though he is himself only a dwarf compared with me. He wants large trees, large everything—even a large woman like Mrs. Gay. We had him examine the fruits on these dwarfs. We found apples of the same varieties from one-third to one-half larger on the dwarfs than on the standards. On pears it was the same way, with more obovate form and better flavor, and now he is the most mixed up man you ever saw on the dwarf proposition. Standards should be headed very low—whips cut back to eighteen inches; no higher. Three, or at most four, branches for the framework, and then trained vase form, or rather the inverted cone. From one-half to two-thirds of the annual growth should be cut back the first few years and from one-third to one-half later. When they come into bearing we put a fir pole in the ground by the side of the trunk, have a few telegraph wire rings in the pole at the proper height and lash the laden branches to these with tarred lath-string. We can then cultivate and perform all necessary operations with ease and comfort. Even if I wanted standards I would have them budded low on quince stocks raised from stools, have just one whorl of quince roots, then plant my tree so that the union is four inches below the surface. In four years the trees would be making roots from the pear trunks, but it would meanwhile come into bearing and would have the low vase form of a regular dwarf. I prefer, however, a regulation dwarf, properly made, and the union at or a little above the ground. Plant them ten feet apart each way, have them double worked where necessary, have the trunk only six inches high or at most eight inches, the top vase form, more spreading than the cone form. A tree six years old should be about five feet high with a spread of about four feet at the top and should hold about one and one-half boxes of fruit, and should have borne before this at least two boxes of fruit. With a stake in the center and the bearing branches lashed to it, we can cultivate them like a field of corn. We can thin the fruit so that no pears touch each other. We can spray with a little compressed-air sprayer; can pick all the fruit standing on the ground and have windfalls



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No danger of injury from rusty nails, machinery, tug of reins, etc.—Hansen's Gloves protect against all, and give easy, free use of fingers and fist.

They are economical, too, and outlast a lot of the trashy kind. When greasy, they can be made clean, soft and shapey with gasoline.

All strongest, softest leather which will not shrivel, shrink, harden, crack or peel. Water won't hurt Hansen's.

Send for book showing many of our 500 styles for motoring, cycling, driving, every sport and work. Ask your dealer, or write us. We will tell you how to order and where to buy. Ask about the Dan Patch driving glove. Address

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Trinidad Lake asphalt makes roofing lastingly tight against rain, sun, wind, snow, heat and cold.

This is the everlasting waterproofer of Nature. We use it to make

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Because it gives absolute protection Genasco is economical roofing—it costs less in the end.

Ask your dealer for Genasco. Mineral or smooth surface. Look for the hemisphere trademark. The Kant-leak Kleet is in every roll of smooth surface Genasco. It waterproofs seams without cement and prevents nail-leaks.

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Largest producers in the world of asphalt and ready roofing

Trinidad Asphalt Lake

reduced to a minimum. By the way, do you know what windfalls mean in the loss and profit column from an orchard of standard trees? If you don't look it up. Your pruning can be done with the hand shears and you will be able to see just where to cut.

The theory for larger fruits on dwarfs is that, while there is a good union between the pear and quince, it is not entirely congenial. The sap goes up all right, but gets it mixed a little in the return and goes to work on a metamorphosis of leaf buds into fruit buds, and by the same process also all the time increasing the size of the fruits, and strange, giving a more obovate form. A Bosc and a Bon d'Jersey will be shorter but thicker than on the standard; an Angoulene will be a large, delicious pear, and an early and prolific bearer, while on the standard it is a late bearer, light producer and of very poor quality. Can we grow such dwarfs? We certainly can. The only soils, so far as I have watched results, on which I would plant neither standards or dwarfs is the sea-washed gravel sand with no hardpan under it. On such soils I would not plant pears, but rather walnuts grafted on Juglans Californica. On all our sandy loams and shot-clay soils the pear does well both as standard and as dwarfs.

Fire Blight.—Should this trouble, which is now destroying the pears of California and has put the pear out of commission in the Eastern and Middle States, strike us in this favored locality we certainly will be in a position to take care of it if we have the dwarf form of tree. It will enable us to detect it immediately, and with a pail of disinfectant and ordinary hand shears we will be able to cut out all affected parts before there can be any spreading of the trouble. We do not anticipate any of this trouble. They have been raising pears in France, Holland and England for a thousand years and are still at it. With a climate similar to that of these countries, we must begin and keep at it for a thousand years to come. "Verily we have a pear heaven here."

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From \$15 An Acre Up

The large assortment of varieties, extremely low cost for land, the especially favored climate, the abundant rainfall, ample sunshine, excellent air drainage and the fact that 6 to 12 cents per box puts Southeastern fruit on the New York City market, is convincing evidence that this section excels all others as an apple and general fruit growing country. Virginia alone in 1912 produced over 1,200,000 barrels of apples.

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Professor S. A. Beach, of Ames, Iowa, formerly connected with the Experiment Station at Geneva, New York, and who wrote the two volumes entitled "Apples of New York," which were the handsomest books ever published in reference to apples, illustrated by colored plates, spent a day in Hood River. The editor enjoyed a very pleasant visit with him. Professor Beach is very popular with everyone who knows him.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

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How to Use the Kimball Cultivator to Keep Your Orchard in Perfect Condition

The first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonal if the trees are planted in that manner.

The rest of the season nothing is needed but the KIMBALL, which should be run over the ground

at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain, or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.



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No. 5—5½ feet, 7 blades, weight complete, 85 lbs.....	15.00
No. 6—6 feet, 8 blades, weight complete, 100 lbs.....	17.50
No. 7—7 feet, 9 blades, weight complete, 100 lbs.....	18.50
No. 8—8½ feet, 11 blades, weight complete, 115 lbs....	20.00
No. 9—10 feet, 13 blades, weight complete, 140 lbs....	25.00

No. 10—12 feet, 10 blades, open center, weight complete, 140 lbs.....	\$22.50
No. 11—12 feet, 15 blades, weight complete, 185 lbs....	30.00
No. 13—One 8½ and one 9 feet, 23 blades, gang, fully rigged, weight 250 lbs.....	47.50
Extra blades, \$1.50 each; weight 5 lbs. each.	
Extra frames, \$1.00 per foot; weight 10 lbs. per foot.	

TERMS: Cash with order, except to dealers with established credit. All quotations f.o.b. The Dalles, Oregon

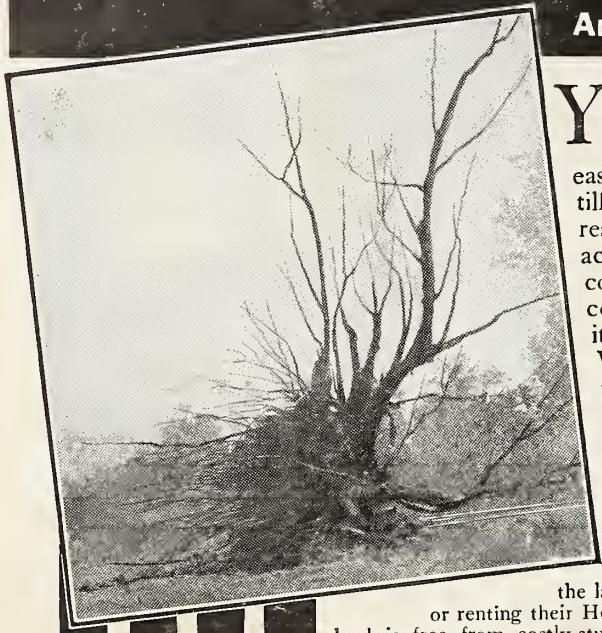
W. A. JOHNSTON, Manufacturer

Long Distance Phone, Red 991

Office and Factory, 422 East Third Street, The Dalles, Oregon

Your 40 Acres of Stump Land Can Be Turned Into a Profit of **\$1281.00 The Very First Year**

And \$750 Every Year After.



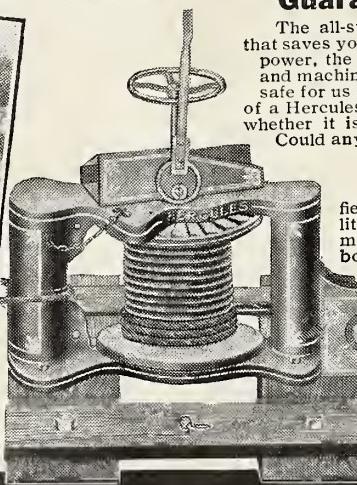
YOU can double the land value by pulling out the stumps. If your stump land is worth \$20 an acre—it would easily be worth \$40 an acre if it were tillable. On 40 acres the increased realty value would be \$800. On 40 acres of cleared land—*virgin soil*, you could easily raise 1500 bushels of corn—at 50c per bushel—\$750. Think it over Mr. Farmer. Stumps cost you big money. With land values going up—and crop prices as high as they are—you *can't afford* to keep on paying taxes for land that doesn't bring in a cent.



or renting their Hercules Stump Puller at a nice profit. But the main thing is, their own land is free from costly stumps—they farm all their land—and all their acres are at top-notch realty value.



machined and finished to reduce friction—hence the lightest weight of any puller made; the Hercules is 60 per cent lighter and 400 per cent stronger than cast iron or the so called semi-steel or new process steel which are catchy phrases now-a-days used to describe cast iron pullers; that you can clear almost three acres without moving the Hercules that the double safety ratchets absolutely prevent accident to the men or team.



Triple Power

I want you to bear in mind that the Hercules is the only Triple Power, All Steel Stump Puller made; that it can be changed from triple to double or single power in a moment's time without trouble; that it is the only stump-puller having all the working parts machined and finished to reduce friction—hence the lightest weight of any puller made; the Hercules is 60 per cent lighter and 400 per cent stronger than cast iron or the so called semi-steel or new process steel which are catchy phrases now-a-days used to describe cast iron pullers; that you can clear almost three acres without moving the Hercules that the double safety ratchets absolutely prevent accident to the men or team.

Guaranteed for Three Years

The all-steel construction, the triple power feature that saves your team and gives a tremendous increase of power, the double safety ratchets and careful turning and machining of every part—all these things make it safe for us to guarantee the replacement of any casting of a Hercules that breaks at any time within three years, whether it is the fault of the machine or your fault. Could any guarantee be fairer or stronger?

Send In Your Name

You cannot afford to have stumps in your field when it is so easy, so cheap and takes so little time to pull them out. Don't wait another minute. Mail me a postal at once for my fine book and my low introductory offer to first buyers. Address me personally,

B. A. FULLER, Pres.

Hercules Mfg. Co.
869 22nd St.
Centerville, Iowa